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A Special Issue devoted to

Reinforcing Social Fabric for a Sustainable Future: Insights from Community Development

Guest Editors

Nur Shahirah Mior Shariffuddin, Muaz Azinuddin, and Noorjima Abd Wahab

PERTANIKA JOURNALS

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Pertanika Journal of Social Sciences & Humanities
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Preface

Communities are sustained not only by their physical resources and economic opportunities but also by the relationships, shared values, knowledge and institutions that connect people. These elements form the social fabric through which communities maintain their identities, respond to disruption and shape their futures. Amid environmental change, socioeconomic pressures and rapid modernisation, understanding how this social fabric can be strengthened has become an important concern for researchers, policymakers and practitioners.

This Special Issue of the Pertanika Journal of Social Sciences & Humanities, entitled "Advancing Social Fabric: Resilience and Sustainability in Community Development," brings together interdisciplinary perspectives on the processes that enable communities to adapt, participate and thrive. Guided by the theme "Reinforcing Social Fabric for a Sustainable Future: Insights from Community Development", it examines how social relationships and collective action intersect with cultural continuity, environmental stewardship and inclusive socioeconomic development.

The contributions address several closely connected areas. One concerns indigenous knowledge, traditional practices and cultural heritage, including the challenges of preserving community identities as social and economic conditions change. A second concerns environmental sustainability and resilience, highlighting the significance of local participation, resource management and community responses to ecological pressures. A third considers the relationship between heritage, tourism and local development, where collaboration among residents, institutions and other stakeholders can contribute to more responsible and inclusive outcomes.

Taken together, these perspectives encourage readers to look beyond narrow understandings of resilience as merely recovering from a crisis. Resilience also depends on the capacity to maintain meaningful social ties, negotiate change, safeguard valued traditions and participate in decisions affecting community life. Similarly, sustainability is not solely an environmental objective. It has social and cultural dimensions that require attention to local knowledge, equitable participation and the long-term wellbeing of communities.

The Special Issue aims to advance discussion across sociology, environmental studies, cultural studies, tourism and related fields. Its broader contribution lies in encouraging dialogue between research and practice: how evidence concerning community networks, governance, cultural resources and environmental management can inform more context-sensitive policies and initiatives. The geographical and disciplinary diversity represented

in the proposed contributions provides opportunities to consider both shared challenges and locally specific responses.

We hope this collection will stimulate further research and constructive engagement among scholars, policymakers, practitioners and community stakeholders. Above all, it invites continued consideration of how resilient and sustainable communities can be nurtured through the relationships, knowledge and collective responsibilities that hold their social fabric together.

Guest Editors
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Social Resilience in Exploring Climate Change Impacts on Quality of Life: A Case Study Temiar Indigenous People

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ABSTRACT

The Temiar indigenous people faced various challenges arising from climate change, a worldwide phenomenon that altering the weather patterns and expanding the frequency of extreme weather events which bring effects towards livelihood, ecosystems and individuals well-being. Deforestation, agricultural practices, urbanisations, and greenhouse gas emissions from burning fossil fuels were factors influencing climate change. The Temiar indigenous people were the first-hand directly impacted of climate change since their livelihoods depend on and close with nature and environment. This research identified the main quality of life indicators among the Temiar indigenous people using the Relative Importance Index (RII). Total of 450 respondents were selected as a representative sample from Temiar indigenous people and participated in this quantitative research design using a structured questionnaire survey. The data was analysed using RII and chemometrics techniques using Statistical Package for Social Sciences (SPSS). According to the Relative Importance Index (RII) results, the Temiar community places the highest value on feeling safe in residential with (RII = 0.866), health satisfaction (RII = 0.824) and satisfaction on air quality (RII = 0.820), demonstrating a good feeling of well-being regardless of environmental issues. Regression analysis revealed that the impact of climate change on quality of life (QoL) is statistically significant but minor (R^2=0.119), indicating that other sociocultural and resilience elements are

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more relevant. These findings emphasise the importance of incorporating indigenous knowledge systems, community resilience, and adaptive methods into future climate adaptation plans in order to improve indigenous communities' sustainability and well-being.

Keywords: Climate change, environmental, indigenous people, quality of life

INTRODUCTION

Climate change is a major worldwide concern that has an impact on a variety of aspects of human life, biodiversity, and ecosystems. The Intergovernmental Panel on Climate Change (IPCC) reports that there was a greater than 50% chance that, under all observable scenarios, global temperatures will rise by 1.5 degrees Celsius or more between 2021 and 2040 (Boehm & Schumer, 2023). Malaysia dealing with a range of environmental challenges, including the effects of climate change, such as changed patterns of rainfall, high temperatures, and extreme weather conditions that are dangerous to human life (Taufek et al., 2021). Mentioned by Ford et al., (2020), indigenous populations are significant vulnerability to the challenges caused by climate change due to their reliance on natural resources for survival. The Temiar community, one of Malaysia's most prominent indigenous groups, is significantly affected by climate change, threatening their traditional knowledge systems, cultural heritage, and well-being.

The main variables contributing to climate change include urbanisation, deforestation, unsustainable agricultural practices, and greenhouse gas emissions resulting from fossil fuel consumption. Research from Clarke et al. (2022) discovered that these consequences have led to an increased frequency of extreme weather events such as heatwaves, droughts, and floods, along with significant alterations in weather patterns. Hence, the Temiar indigenous people are directly impacted, as it depends on forest and rivers for their livelihood. As supported by Arora et al., (2023), indigenous people face risks to their existence and quality of life related to alterations in traditional farming practices, biodiversity loss and water scarcity.

Besides, the indigenous Temiar people are experiencing severe consequences of climate change, including increased health risks, unstable food supplies, and a loss of their traditional ecological knowledge, amid their close ties to nature (Bogdanova et al., 2021; Redvers et al., 2023). The increased number of natural disasters has made these problems worse as they directly threaten their way of life and health. Nevertheless, limited research has been done on how climate change impacts indigenous people’s quality of life and resilience strategies. Therefore, it is essential to create policies which could safeguard and empower the indigenous populations against environmental challenge.

Recent studies highlight that climate change has had a significant impact on

the socioeconomic conditions and health of indigenous populations worldwide (Datta et al., 2024; Lansbury Hall & Crosby, 2022). Higher exposure to climatic disasters increases the chance of health problems, including waterborne infections and other diseases. Additionally, changes in climate patterns could disrupted traditional agricultural cycles, making it difficult for indigenous farmers to continue producing food (Muluneh et al., 2021). These difficulties highlight the urgent necessity for indigenous-specific climate adaption plans. The indigenous groups in Malaysia likely Temiar people depend on traditional ecological knowledge to make a living. Sustainable farming and forest conservation are main cultural customs that are essential in preserving the natural balance of the environment (Rai & Mishra, 2022). However, their quality of life is threatening as a consequence of the catastrophic events brought on by climate change and expanding deforestation. Their ability in adapting climate challenge could weakened as no proper intervention provided to address the loss of indigenous practices and knowledge.

The purpose of this study was identifying the most important quality of life indicators among the Temiar indigenous people using the Relative Importance Index (RII). It highlights the significance of traditional ecological knowledge in adaptation techniques and evaluating the relationship between climate-induced challenges and indigenous resilience. The findings provide significant perspectives on the discussion of climate change and indigenous well-being. This study supports the Sustainable Development Goals (SDGs) of the United Nations, specifically the Good Health and Well-Being (SDG 3), Climate Action (SDG 13) and Life on Land (SDG 15), as well as highlights the need for an inclusive and sustainable future for indigenous people.

LITERATURE REVIEW

Social Resilience and Quality of Life

The concept of social resilience includes the capability in handling disruptions brought on by environmental, social, political, and others. Social resilience refers to the ability participate in, creating, and maintain healthy social interactions in addition endure and recover from the pressures that come with social engagement (Moya et al., 2022; Singapore Management University, 2024). Researchers implemented social resilience in investigating the communities respond to natural disasters, economic shocks, and conflicts, together with people's physical and mental health affected by illness, poverty, and domestic violence (Alizadeh et al., 2022). In the context of indigenous, it has strong foundation in cultural norms, common practice and social structures that offer coping strategies during difficult times (Bihari et al., 2023). Mentioned by (Saul, 2022), traditional knowledge, group customs, and strong family relationships frequently serve as buffers, strengthening the community's resistance to and ability to recover back from disasters. Hence, social resilience is essential for allowing vulnerable people to sustain themselves over a period of time.

In a sociological context, quality of life defined as a person's ability to engage in meaningful social interaction, social connections, and resource accessibility are frequently linked to their life (Nutakor et al., 2023). Psychological research highlights that quality of life consists of subjective happiness, satisfaction with life, emotional stability, and a feeling of control over circumstances in life (Das et al., 2020). Public health and medical disciplines describe quality of life in terms of physical well-being, ability to function, mental health condition, and accessibility to healthcare services (Kaplan et al., 2022).

Environmental sustainability researchers are seeking to expand the notion of quality of life by integrating environmental quality, ecosystem services, and human-nature interactions, especially in communities that rely directly on natural resources for their livelihoods (Arbuzova & Kubrina, 2024). In indigenous contexts, quality of life is multidimensional, incorporating heritage continuity, spiritual wellness, land connection, and the safeguarding of traditional knowledge systems, in addition to material and health-related indicators (Taylor et al., 2023). Researchers have progressively linked quality of life to social resilience, especially in rural and indigenous populations. From another perspectives, quality of life is a complex concept that includes how people view their place in life in respect to their culture and values, as well as their objectives, standards, expectations, and worries (Veenhoven, 2024).

The term "quality of life" seeks to measure the overall well-being of a population or individual with respect to both positive and negative aspects of their lives at certain points in time (Teoli et al., 2023; Frisch, 2024). Ismail et al. (2024a) highlights that psychological well-being, environmental safety, financial stability, and physical health are some of the components of quality of life. Regarding the indigenous communities, it includes cultural and spiritual elements as well as land stewardship, language preservation, and ceremonial practices. (Terpstra et al., 2021). The Malaysia Quality of Life Index (MQLI) was chosen for this study because its focus on fundamental living conditions is ideal for assessing quality of life in indigenous communities, and the survey instrument was designed based on its components (Department of Statistics Malaysia, 2023). The components and sub-index of Malaysia quality of life (MLQI) was displayed in Table 1. The Malaysia Quality of Life Index (MQLI) contains 45 indicators, which are divided into the 11 QOL components as shown in Table 1.

Social capital known as the networks of reciprocity shared standards, and trust is acknowledged as a main factor in social resilience (Carmen et al., 2022). Higher level of social capital linked to various advantages like improved health, increased sense of community, and enhance community engagement, hence improving one's well-being (Imbulana Arachchi et al., 2023). Philip et al., (2022) stated that social capital frequently preserved in indigenous communities through cooperative labor systems, familial relationships, and

Table 1
The components and sub-index for Malaysia Quality of Life (MQLI)

Components	Sub-Index
Income and Distribution	113.3
Workplace Environment	104.6
Transportation and Communication	120.3
Health	110.5
Education	120.4
Housing	115.7
Environment	106.6
Family Life	104.6
Social Participation	110.1
Public Safety	110.8
Culture and Leisure	113.5
Malaysia Quality of Life Index	111.9

Note. Base Year 2000 = 100
Source: MENTERI, 2012 and DOSM,2023

oral traditions. Furthermore, additional challenges like land invasion, environmental degradation, and displacement could weaken these vital relational networks, which are important in responding towards climate-related catastrophes such as floods or food shortages (Nguyen et al., 2023).

Harangody et al., (2022) argues which is the local tradition and knowledge have a strong relationship with resilience in indigenous community. Traditional ecological knowledge (TEK) offers localised wisdom for the management of natural resources and anticipating environmental changes (Mardero et al., 2023). On the other hand, TEK provides a foundation for collaborative learning and innovation, enhancing the capacity to manage evolving risks (Berkes et al., 2021). Given that this knowledge systems are dynamic and flexible, communities can modify their practices in response to altering climatic conditions while maintaining their cultural identity (Ghorbani et al., 2021). Consequently, the preservation and recognition of TEK are important for both adapting to change and enhancing the indigenous people's well-being (Das et al., 2021).

Considering its importance, policy and development frameworks frequently neglect the social dimension of resilience. Yang et al., (2021) points out that most adaptation strategies prioritise technological and infrastructure solutions over local experiences and practices. When indigenous people are not included in the decision-making processes that are crucial to their future, their capacity to design their own future is hindered (Gustafsson et al., 2022). Thus, inclusive strategies that enhance indigenous viewpoints and integrate their knowledge into resilience planning are

essential to address this issue. Enhancing social resilience is likewise essential for improving the quality of life in indigenous communities and ensuring sustainable development outcomes.

In this context of study, quality of life is considered as the dependent variable. Individuals and societies' quality of life are determined by their environmental, social, and economic circumstances. Previous research has consistently shown that changes in environmental circumstances, particularly those caused by climate change, affect both objective and subjective aspects of quality of life, such as health status, environmental satisfaction, safety, and general well-being. Thus, quality of life was an appropriate dependent variable for analysing how external stressors, such as climate change, influence indigenous well-being.

Climate Change and Indigenous People

Globally, climate change issues are worsening, impacting both human livelihoods and ecological systems. Climate scientists predict over 25% of Malaysia's population will be displaced due to the country's increasingly effects of changes in the climate and environmental degradation by 2030 (Sahani et al., 2022). Ismail et al. (2024b) defines "climate change" terms as gradual alterations of weather trends, temperatures, and other climatic variables. Indigenous community which traditional practices and livelihoods that strongly related to environment are suffering the most severe consequences (Aich et al., 2023; Jerez, 2021). The traditional livelihood that strengthens indigenous well-being are disrupted the ecosystems by rising temperatures, changed precipitation patterns, and frequent floods (Dhimal et al., 2021).

Research reveals that indigenous communities are affected from the climate-related changes which risks their health issues like vector-borne illnesse, respiratory failures, and water-borne illnesses (Akanwa et al., 2022; Anik et al., 2023). Moreover, the indigenous community that reliance with rain-fed crops, prolonged droughts caused by climate change resulting in widespread agricultural failures (Atanga et al., 2021), therefore resulting to food insecurity (Saleem et al., 2024). Particularly, floods have been linked to outbreaks of diarrheal and vector-borne diseases, highlighting the relationship between environmental and health hazards. (Coalson et al., 2021). The risks are further compounded in many rural communities by a lacking emergency response services and infrastructure (Doke et al., 2021). As environmental changes become increasingly frequent, the capacity of these societies to adapt is subject to these factors.

Regardless the vulnerability, indigenous peoples maintain comprehensive ecological knowledge systems developed over centuries via interaction with and observation of their environment. Traditional ecological knowledge (TEK) encompasses insights regarding climatic trends, soil fertility, biodiversity, (Harefa, 2024) and others which are essential for adapting to environmental change (Dalyan et al., 2024). For instance, farmers in indigenous

communities may adjust their planting and harvesting strategies in responses to climatic disasters to secure their food supply (Mallick et al., 2024). Indigenous farmers may advance their planting schedules to align with the excess rainfall, aiming to harvest prior to the onset of severe drought, in order to cope with increasingly early and extreme dry seasons (Ricart et al., 2022). Nonetheless, traditional climate adaption tactics often overlook the potential of TEK, resulting in several top-down solutions that misalign with the genuine needs and practices of indigenous communities. (Rarai et al., 2022).

Enhancing the accessibility and justice of climate governance involves reconsideration in collaboration with indigenous perspectives. Several studies reported such adaptation strategies that developed in collaboration with indigenous community are more successful, long-lasting, and accepted in society. As example, the restoration of traditional Sasi Laut system by indigenous coastal communities in Maluku, Indonesia, was supported by researchers and non-governmental organisations, driven by concerns of overfishing and marine degradation caused by climate change (Daeli et al., 2019; Muin et al., 2023). The collaborative efforts leading in improving food security, restored fish populations, and enhanced community governance by incorporating scientific marine conservation techniques with traditional laws (Ufie et al., 2023). This case study proves that the potential of traditional ecological knowledge-based co-management in strengthening ecosystem resilience while preserving cultural integrity is important. As such, indigenous knowledge is important to create resilient, community-driven climate responses rather than being regarded as supplementary.

Climate change is regarded as the independent variable in this study, serving as an external environmental driver that impacts human and social systems. Climate-related issues, such as modified temperature patterns, shifting precipitation, extreme weather phenomena, and environmental degradation, function independently of individual behaviour and directly or indirectly impact livelihoods, health, and environmental quality. Multiple studies highlighted climate change as a primary factor influencing disparities in quality of life, especially among indigenous groups whose livelihoods are intricately linked to natural ecosystems.

Underpinning Theory

Two main theoretical frameworks act as the foundation for this research: the Social Resilience Theory and the Social-Ecological Systems (SES) Theory. These frameworks provide in-depth understanding regarding the climate change impact on Temiar indigenous people's quality of life and the capability in adapting and their cultural resilience which is significance in maintaining their wellbeing. The Resilience Theory was introduced by Holling 1973, a Canadian ecologist that focuses on how systems respond to shocks and disturbances while maintaining their fundamental

functions (Holling, 1973; Mayar et al., 2022). Social Resilience theory describes the ability of individuals or communities to persevere, adjust, and prosper in the amid major transformations and challenges (Rachmad, 2022). Mentioned by Zhai et al. (2024), resilience identifies as the ability of people and groups to resist shocks, continue to perform vital tasks, and adapt to change. The Temiar people demonstrate resilience with the application of traditional ecological knowledge (TEK), social support structures, and cultural practices that encourage adaptation and restoration.

Elinor Ostrom introduced Social-Ecological Systems (SES) Theory in 2009, highlighting the dynamic relationship between ecological processes and social structures, comprehending human and environmental systems as interrelated and interacting. **(**Biggs et al., 2021; Ostrom, 2009**)**. The SES framework provides fundamental for assessing the behaviours which ecological deterioration impacts community survival and continuity, highlighting the necessity of sustainable and integrated methods to environmental change management (De Garine-Wichatitsky et al., 2021). This theory applicable to indigenous communities as it's significant to understand indigenous community like the Temiar as they heavily depend on nature for their way of life and culture, therefore through deforestation, extreme weather, and biodiversity loss can negatively affects both their well-being and the ecosystem.

In conjunction with these frameworks, the theory of Maslow's Hierarchy of Needs offers a human-centered framework for evaluating quality of life. Maslow (1943) proposed that human well-being develops through a structured hierarchy of needs, starting with physiological necessities (such as food, water, and shelter), followed by safety (including security and stability), then feelings of love and belonging (which includes friendship, family, and intimacy), followed by esteem (respect and recognition), and self-actualisation, which refers to discovering one's full potential. In indigenous societies, fulfilling fundamental necessities like food security, shelter, health, and personal safety serves as the foundation for achieving higher levels of social, cultural, and psychological well-being (Sutherland & Adams, 2019).

Maslow's theory is relevant to this study because it can theoretically link quality of life variables (such as income satisfaction, living conditions, well-being, environmental safety, and public security) to basic human needs. The threat to basic needs posed by climate change impacts, such as environmental degradation and disruption of livelihoods, may adversely affect the overall quality of life and resilience of indigenous communities. Thus, connecting human wellness theory with resilience and social-ecological perspectives and incorporating Maslow's Hierarchy of Needs enhances the theoretical foundation of this research.

Case Study on Quality of Life and Climate Change among Indigenous Communities

Quality of life has been the subject of several empirical studies from a variety of academic

fields, including public health, sociology, environmental studies, and indigenous research. Prior studies indicate that quality of life is a multidimensional construct that may be evaluated by both quantitative measures (including income, housing, health, and environmental circumstances) and subjective assessments (such as satisfaction, well-being, and perceived safety). In the context of climate change, research has increasingly emphasised the interaction of environmental stresses with social, cultural, and economic factors in shaping community well-being. This perspective was significant for indigenous people, whose quality of life was deeply connected to land, natural resources, cultural continuity, and traditional livelihoods, making them particularly at risk for climate-induced environmental changes. Table 2 present the summary of case study on quality of life and climate change among indigenous communities.

From the Table 2, it was demonstrated that quality of life is multidimensional within the indigenous and climate-affected communities. Quality of life has been studied in both global and local settings using subjective aspects like well-being, cultural continuity, perceived safety, and adaptive ability, as well as objective ones like health, income, environmental conditions, and job security. Global-scale reviews highlight that traditional ecological knowledge (TEK) gives communities the ability to deal with environmental challenges in ways that are traditionally important, and that is why indigenous resilience remains strong (Ford et al., 2020). Nevertheless, regional studies, like those conducted on the Sámi in Finland, show that when traditional land-based practices and cultural systems are progressively restricted, climate change can negatively impact quality of life, underscoring the fact that resilience varies

Table 2
Summarise on quality of life and climate change among indigenous communities

Study Area	Indigenous Population	Research Method	QoL Indicators	Findings	References
Global	Global Indigenous population	Systematic literature review	Multidimensional	Indigenous communities more resilient to environmental change since they use traditional knowledge to adapt to environmental change.	Ford et al., 2020
Finland	Saami Indigenous	Systematic literature review	Mental health, cultural well-being, lifestyle and diet, adaptive capacity	The Saami have limited adaptability to climate change impacts due to difficulties in preserving traditional practices and land-based lives.	Jaakkola et al., 2018

Table 2 (*continued)*

Study Area	Indigenous Population	Research Method	QoL Indicators	Findings	References
Australia	Remote Indigenous Settlement	Review	Physical health, phycological well-being, environmental resource security, socio-economic conditions	Climate change increase health vulnerability via direct and indirect pathways	Lansbury Hall & Crosby, 2022
Guyana, South America	Amerindian peoples	Qualitative	Food security & nutrition, livelihood stability, social & cultural practices	Climate change negatively effects food productions, threatening food security and income	Bynoe, 2015
Hopedale, Canada	Inuit Community	Mixed qualitative	Livelihood security, health & safety, adaptive capacity	Climate change increased the risk of traditional hunting and harvesting by altering sea ice thickness	Malik et al., 2025
Selangor, Malaysia	Temuan Indigenous People	Qualitative	Environmental stability, TEK, governance & rights, livelihood security	Environmental damage & unpredictable weather threaten safety and quality of life	Rahman et al., 2025
Kelantan Malaysia	Temiar Indigenous People	Quantitative	Malaysia Quality of Life	QoL influenced by socio-economic and environmental factors	Ismail et al., 2024a
Johor, Malaysia	Indigenous People	Cross sectional quantitative	Lifestyle vulnerability, awareness & risk perception, health impacts	Indigenous respondents considered climate change as an immediate threat to their health and well-being.	Kwa et al., 2024
Sarawak, Malaysia	Indigenous People	Mixed method	Livelihood security, socio-ecological resilience, cultural practices, and social networks	TEK is not only a cultural asset but a practical tool for climate adaptation	Hosen et al., 2020
Sabah, Malaysia	Indigenous People	Mixed Method	Awareness & perception of climate change, TEK, and climate impacts on livelihood	The awareness and attitudes of indigenous peoples concerning climate change significantly influenced their willingness to support participate in adaptation measures.	Pimid et al., 2022

among indigenous communities (Jaakkola et al., 2018). Bynoe (2015) conducted a study on Amerindian communities in Guyana, revealing that climate change adversely impacts food production systems, thereby threatening food security, livelihood stability, and nutritional health, demonstrating how environmental change can directly compromise essential aspects of quality of life when adaptive capacity is limited. Similarly, Malik et al. (2025) observed that climate-induced sea ice shifts in Hopedale, Canada, have raised hunting and harvesting safety concerns, reducing livelihood security and physical well-being.

Research in Australia and Malaysia demonstrates the impact of climate change on the quality of life for indigenous populations via interconnected health, environmental, and socio-economic pathways. Empirical research conducted in Malaysia among indigenous tribes in Kelantan and Sabah shows that socioeconomic circumstances, cultural practices, and perspectives contribute to quality of life in addition to the environment (Ismail et al., 2024a; Pimid et al., 2020). Furthermore, mixed-method studies by Hosen et al. (2020) mentioned that TEK serves as a practical adaptation mechanism as well as a cultural legacy, enhancing socio-ecological resilience and assisting community-based responses to climate change. Rahman et al. (2025) indicated that degradation of the environment and unpredictable weather conditions within the Temuan community in Selangor have intensified concerns regarding safety, livelihood stability, and overall quality of life. Conversely, Kwa et al. (2024) discovered that indigenous respondents in Johor regarded climate change as an imminent threat to health and well-being, signifying increased risk awareness and lifestyle susceptibility.

Overall, the reviewed case studies emphasised the necessity of assessing quality of life through integrated objective and subjective frameworks, especially when investigating the effects of climate change on indigenous populations. These case studies indicate that environmental pressures pose threats to health, livelihoods, and safety; however, strong social ties, cultural traditions, and traditional knowledge may assist communities in addressing these challenges.

METHODS

Research Design

This study employed quantitative research design to identify the impacts of climate change on the quality of life of the indigenous community. The study used a survey-based research approach, which enabled the systematic collecting of standardised quantitative data from a large population through a structured questionnaire. The demographic characteristics such as age, gender, religion, education level, marital status, occupation, and income were included in the questionnaire. Furthermore, the questionnaire consists of 11 main components of quality of life according to Malaysia Quality of Life (MQLI); (A) income and distribution, (B) workplace environment, (C) transportation and

communication, (D) health, (E) education, (F) housing, (G) environment, (H) family life, (I) social participation, (J) public safety, and (K) culture and leisure. The questionnaire was adapted from the Malaysia Quality of Life Index (MQLI), a nationally acknowledged framework extensively utilised in quality-of-life evaluations in Malaysia. The MQLI components were transformed into survey items to represent the socio-economic, environmental, health, and social conditions pertinent to indigenous cultures. Minor contextual modifications were implemented to promote cultural relevance and understanding among the Temiar participants, while preserving the conceptual framework of the original MQLI model. Likert scale ranging from 1 to 5, with 1 denoting "strongly disagree," 2 "disagree," 3 "somewhat disagree," 4 "agree" and 5 denoting "strongly agree" was implemented to assess the response. The five point of Likert scale allows respondents to indicate different levels of perception and satisfaction, making it particularly effective for evaluating multidimensional issues like quality of life. The application of a Likert scale facilitates compatibility with analytical methods such as the Relative Importance Index (RII) and regression analysis, thereby enabling reliable and significant statistical interpretation.

Study Area and Population

This research was carried out at the Nenggiri River Basin, Gua Musang, Kelantan, Malaysia as shown in Figure 1. Located between latitudes 4°40′ and 6°12′ North and

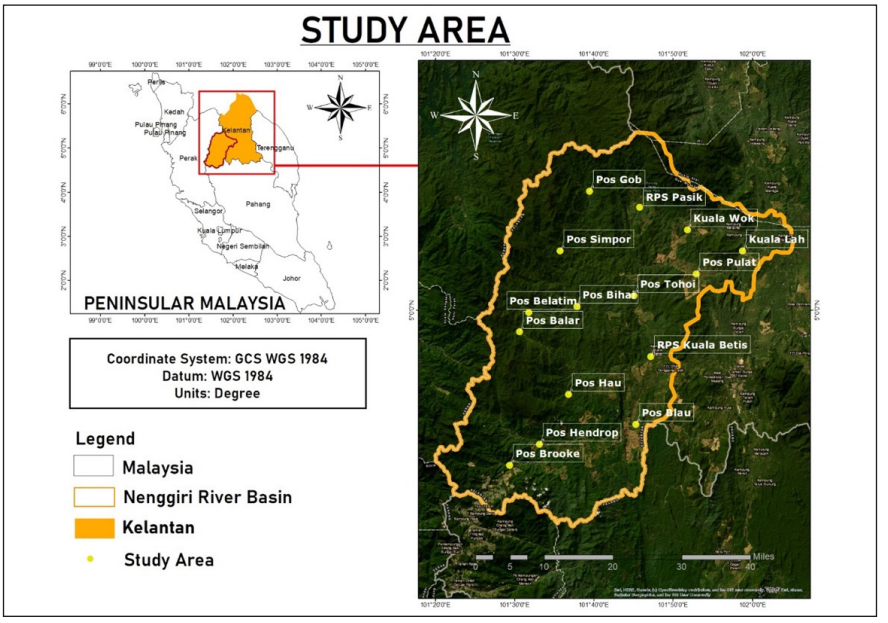

Figure 1. Location of the study area, Nenggiri river basin
Source: Author's work

longitudes 101°20′ and 102°20′ East, the Nenggiri River Basin had a total catchment area of approximately 3,993 km^2. The target population consisted of Temiar indigenous individuals living in the Nenggiri River Basin, with their livelihoods and well-being strongly linked to the nearby natural environment.

Data Collection

Primary data were collected using a structured questionnaire through face-to-face interviews and completed surveys. Total of 450 respondents (indigenous people) that resident along the Nenggiri river basin were collected through quantitative study using random sampling with distribution of survey questionnaire and direct interviews. Random sampling was performed at both the household and individual levels among Temiar communities along the Nenggiri River Basin. Temiar households were identified with the aid of local community leaders (Tok Batin), and one eligible respondent aged 18 years or older, who had resided there for a minimum of one year, was randomly selected from each household. This method guaranteed extensive representation across age, gender, and socio-economic categories while preserving randomness within field-based limitations. The data collection and fieldwork were conducted over a one-year period from January 2024 to January 2025. Total of 450 respondents (indigenous people) that resident along the Nenggiri river basin were distribute the survey questionnaire and direct interviews. The involvement of trained field assistants, who assisted in questionnaire distribution, survey item clarification, and communication with respondents.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) version 27 software was used to import and analyse the acquired data for statistical analysis. The respondents' demographic information was examined and presented using descriptive analysis. Furthermore, regression analysis was performed to investigate the relationship between climate change indicators and quality of life. In this study, regression analysis allowed to quantify the extent to which reported climate change impacts explain variances in quality of life among the Temiar indigenous population. Furthermore, the Relative Importance Index (RII) is used to assess the relative relevance of quality variables. The formula for calculating RII were as Equation 1.

$$Relative\ Importance\ Index\ (RII) = \frac{\sum W}{A * N} \quad [1]$$

W is the respondent weighting of each statement (ranging from 1-5); A is for a higher number of respondents, and N is the overall number of respondents. The points on the Likert scale are equivalent to the value of W, which represents the respondent's weighting of each component. This method determines the factor using a

ranking mechanism based on the weight received from the given data value.

Pilot Study

Prior to the main survey, a pilot study was conducted involving 30 Temiar respondents to assess the reliability, clarity, and suitability of items in the questionnaire. The pilot research feedback revealed that slight modifications in language were necessary to enhance respondents' understanding. The reliability analysis from the pilot study indicated satisfactory internal consistency, as evidenced by Cronbach's alpha values surpassing 0.90 for the quality-of-life dimensions. Hence, the questionnaire was refined before full scale data collection based on these results.

Ethical Considerations

This study followed ethical guidelines for research involving human subjects, particularly indigenous populations. Prior to data collection, authorisation to perform the study was secured by engaging with local community leaders, including the Tok Batin, to verify compliance with community norms and cultural practices. Participation in the study was fully voluntary, and all respondents provided informed consent before receiving the questionnaire. Respondents were told about the study's goal, the confidentiality of their responses, and their opportunity to withdraw at any time without penalty. No personal identifiers were collected, and all information was used purely for academic research.

RESULTS AND DISCUSSION

The Socio-Demographic Profile

Table 3 shows the socio-demographic profile of 450 respondents that live along the Nenggiri river basin. Socio-demographic profiles consist of age, gender, religion, education level, marital status, occupation, and incomes gathered. The frequency and percentage distribution of each socio-demographic trait was detailed in the Table 3.

As shown in Table 3, the majority of respondents were between the ages of 26 and 40, with (42%) indicating a generally young and active adult population. The following were aged 41 to 59 (28.2%), youngsters aged 19 to 25 (14%), and only (6.7%) were under 18 years old, while (9.1%) were 60 and above. The gender distribution among responders was nearly balanced with man (51.6%) slightly outnumbering woman (48.4%). Religion-wise, Islam was the major religion (72.7%), followed by those who practiced animism or indigenous spiritual beliefs (23.6%), Christians (2.9%) and Buddhists (0.9%). The existence of animist practices demonstrates the Temiar community's persistent reliance on traditional beliefs, which may influence perceptions of environmental change and reactions to climatic issues. In terms of education, (39.1%) of respondents stated having no formal education, (25.6%) had completed primary school, and (33.3%) had completed secondary school. Only a small percentage went on to further their education, with only (1.6%) completing STPM/ HSC and a combined (0.4%) completing

Table 3
The socio-demographic profile of respondents

Socio-Demographic		Frequency, n	Percentage (%)
Age	Below 18	30	6.7
	19 - 25	63	14
	26 - 40	189	42
	41 - 59	127	28.2
	60 and above	41	9.1
Gender	Man	232	51.6
	Woman	218	48.4
Religion	Islam	327	72.7
	Christian	13	2.9
	Buddha	4	0.9
	Others (Animisms)	106	23.6
Education Level	No formal education	176	39.1
	Primary school	115	25.6
	Secondary school	150	33.3
	STPM/HSC	7	1.6
	Diploma	1	0.2
	Others	1	0.2
Marital Status	Married	339	75.3
	Single	90	20
	Widow	3	0.7
	Widower	18	4.0
Occupations	Self-Employed	258	57.3
	Government	10	2.2
	Private Sector	16	3.6
	Housewife	66	14.7
	Unemployed	93	20.7
	Others	7	1.6
Income	RM1,000 and ````below	412	91.6
	RM1,001- RM2,000	35	7.8
	RM2,001 - RM3,000	3	0.7

diploma-level or other courses. This lack of formal education demonstrates significant obstacles to accessing information, services, and job opportunities, which can have a severe impact on resilience and quality of life in the face of climate change. It also highlights the necessity of customized educational and awareness campaigns that take literacy and local knowledge systems into account. Marital status data reveals that the majority of respondents (75.3%) were married, (20%) single, while widows and

widowers represented a tiny proportion of the group (0.7% and 4%, respectively). The occupation numbers reflect the community's socioeconomic status, with more than half (57.3%) self-employed with most likely in forest-based work or agriculture and (20.7%) jobless, while (2.2%) of the respondents worked in government and 3(.6%) in the private sector, demonstrating limited access of formal employment opportunities. The income levels shown severe economic vulnerability with (91.6%) of respondents reported monthly earnings of RM1,000 and below, as well as (0.7%) earning more than RM2,000. These data highlight the community's economic instability since limited income hinders access to education, healthcare, clean water, and other resources.

The Relative Importance Index (RII)

The Relative Importance Index (RII) was utilised to assess Quality of Life (QoL) using primary data from a field survey. Based on literature by Magdalena et al. (2025), this method of analysis can be used to identify the most significant elements on a study object by displaying the relative value of each aspect based on respondents' perspectives. The highest RII scores represent the highest rating scale that respondents choose to assess their quality of life. This RII was generated using the survey respondents' preference scale. Table 4 shows the relative importance index calculated from the QOL components.

From the Table 4, the highest relative importance index was that respondents feel safe in their residential area with (RII=0.866), showing that the Temiar people appear to have a strong sense of public safety and communal security. This is followed by satisfaction with current health and air quality with RII=0.824 and RII=0.820 respectively. It reflects a clean environment, a probable dependence on traditional health practices, and a low level of industrial contamination in their locations. Conversely, the lowest RII was juvenile in the community with RII=0.472, showing a positive sign in Temiar community which implying a healthier environment for young people, with strong social supports, economic stability, and competent institutions in place to prevent and handle youth crime.

The highest-ranked item in the income and distribution component was "income is distributed and adequate" (RII = 0.649), which could indicate perceived equity in income sharing or shared economic arrangements. Interestingly, "satisfied with present income" ranked somewhat lower (RII = 0.560), reflecting that even though income considered to be evenly distributed, the real amount was insufficient. This is supported by the statement "the income enables me to support myself and my family" (RII = 0.640), which highlights the financial limitations. The findings correspond with previous demographic data, which showed that 91.6% of respondents earned RM1,000 or less per month, indicating financial hardship that can have an impact on overall quality of life.

For the component workplace environment, satisfaction with current

Table 4
The Relative Importance Index (RII) calculated from QoL elements

Components	RII	Rank
INCOME AND DISTRIBUTION		
Level of satisfaction with present income	0.560	2
Income is distributed and adequate.	0.649	1
The income enables me to support myself and my family.	0.640	3
WORKPLACE ENVIRONMENT		
Content with present employment	0.698	1
Community experiences a low rate of unemployment	0.636	2
Present job were highly risks	0.619	3
TRANSPORTATION AND COMMUNICATION		
Have a vehicle	0.673	2
Communicate using a mobile phone	0.766	1
The quality of roads in my living area is satisfactory	0.631	3
HEALTH		
Current health is satisfactory	0.824	1
People in this community tend to live a long time	0.729	3
Pleased with the provided healthcare services	0.740	2
EDUCATION		
Community able to write and read	0.742	2
The community has members pursuing tertiary education	0.687	3
The educational facilities are satisfactory	0.752	1
HOUSING		
Pleased with my current residence	0.776	2
The community has a sufficient power supply	0.654	3
Water supply is adequate	0.792	1
ENVIRONMENT		
The air quality is satisfactory	0.820	1
Pleased with the water conditions	0.792	2
The area around my residence has experienced logging	0.647	3
FAMILY LIFE		
Pleased with the affordability of food and kitchen necessities	0.677	2
Many family members live in the same household	0.776	1
The community is dealing with juvenile delinquency.	0.472	3
SOCIAL PARTICIPATION		
Community takes part in NGO activities	0.732	3
Community takes part in event organized by JAKOA/JKKK/TOK BATIN	0.800	2
Become a registered voter	0.811	1
PUBLIC SAFETY		
Feel secured in my residential area	0.866	1
Residential area experiences frequent accidents	0.552	2
Neighborhood has a high level of crime.	0.506	3

Table 4 (*continued*)

Components	RII	Rank
CULTURE AND LEISURE		
Watch entertainment shows on TV.	0.616	1
Various accommodations available in the neighborhood, like hotels, homestays, and chalets.	0.512	3
Many visitors/tourists in my residential area.	0.562	2

employment received the highest RII score (0.698), demonstrating a modest level of contentment with existing work, which are mainly self-employment and informal sectors. The unemployment rate was seen as moderately low (RII = 0.636), probably due to the dependence on agriculture for survival, forest activities, or informal labor. Nevertheless, the opinion on present professions as unsafe (RII = 0.619) indicates that many people work in hazardous or physically demanding occupations. These jobs may expose individuals or respondents to environmental risks, particularly during extreme weather conditions such as heatwaves, drought, intense rainfalls, storms, and others that are caused by climate change. In all, while employment was readily available, job safety and reliability remain concerns.

The transportation and communication component revealed the highest (RII = 0.766) on communication using mobile phones, showing strong connectivity and access to communication tools. The ownership of vehicles was also prevalent with (RII = 0.673), enhancing accessibility and mobility to key services. Despite this, the quality of roadways in the community obtained a lower score (RII = 0.631), highlighting issues in maintenance of accessibility or infrastructure. Poor road conditions may impact transportation access and efficiency and to healthcare, education, and others for the indigenous community. Enhancing infrastructure could improve community engagement and overall well-being.

Health represented one of the most positively scored components, with respondents reporting high levels of satisfaction with their present health state (RII = 0.824). This reflects the community's general perception of well-being, which may be influenced by active lifestyles and traditional practices. The satisfaction on quality of healthcare services was also rated positively with (RII = 0.740), even though there may still be limitations in specialty and accessibility. Respondents stated that people in their community live longer live (RII = 0.729), which could be explained to strong family relationships and traditional health practices. Within the limited formal health infrastructure, these responses may represent practice on traditional medication such as herbalism, spiritual beliefs of nature, and others. These findings emphasise how resilient the community's health is, and it was critical to strengthen the current healthcare infrastructure.

The most common response in the education category was satisfaction with educational facilities (RII = 0.752), suggesting that the community finds schools and learning settings to be generally acceptable. Reading and writing skills were valued (RII = 0.742), indicating that the population's fundamental literacy is beneficial. However, involvement in tertiary education was rated lower (RII = 0.687), indicating a lack of chances for higher education. This could be due to economic constraints or geographic distance and lack of exposure to the significance of tertiary education. Improving educational opportunities beyond the secondary level may aid in long-term community development.

In terms of housing, respondents were quite satisfied with the sufficient supply of water (RII = 0.792), which is necessary for daily life and cleanliness. Additionally, satisfaction with present housing conditions received a high score (RII = 0.776), suggesting that the majority of families are content with their living arrangements. However, the power supply's sufficiency scored lower (RII = 0.654), indicating either uneven access to electricity or poor infrastructure. Access to electricity is essential for communication, health, and education, particularly in times of emergency.

Strong civic awareness was demonstrated by social participation, with voter registration receiving the highest rating (RII = 0.811), followed by participation in community events (RII=0.800) and (RII=0.732) for engagement with NGO activities. The most popular cultural and recreational activity was watching television for entertainment (RII = 0.616), demonstrating the importance of media in regular life. Besides, the presence of tourists had moderate value at (RII=0.562) and accommodations like hotels and homestays, had the lowest value (RII = 0.512), showing that areas had underdeveloped infrastructure of tourism. Further development of nature-based and cultural tourism has the potential to promote cultural exchange and economic benefits.

In conclusion, despite experiencing obstacles in financial matters, educational opportunities, and infrastructure, the Temiar community maintains a strong feeling of well-being, particularly in areas such as safety, health, and social participation. Their resiliency appears to come from cultural ideals, traditional habits, and strong communal ties rather than material prosperity. While there are gaps in areas like employment safety, access to higher education, and reliable electricity, the community nevertheless rates high satisfaction in many elements of daily life, such as safety and security, health and air quality, social participation. Moving forward, efforts to assist the Temiar should focus on increasing access and opportunities while preserving their traditional identity and way of life.

Regression Analysis

Regression analysis is a method for summarising data from observations by calculating the dependent variable's mean and variance based on variations in multiple independent variables (Chiozza, 2022). Figure 2 displays the regression analysis of climate change and quality of life. The regression analysis statistics for climate change and their impacts on quality of life were detailed in Table 5. Climate change was one of the study's independent factors, while life quality was its dependent variable.

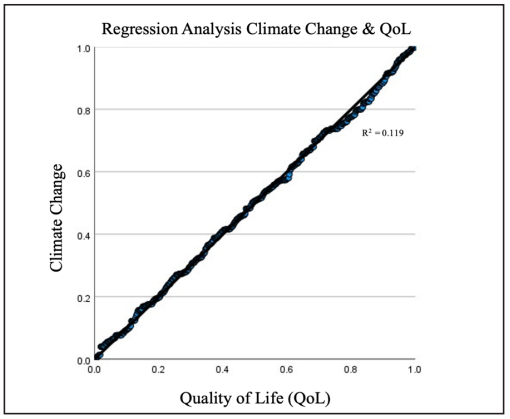

Figure 2. Regression analysis of climate change and quality of life (QoL)
Source*:* Author's work

Table 5
Regression analysis statistics

Observations	450
Sum of weights	450
R^2	0.119
Adjusted R^2	0.097
Mean Square	1.260
F	5.363
Std Deviation	0.328
Sig. F	<0.001

R^2 value affects the dependence between the independent and dependent variables. From the table above, it is shown that $R^2 = 0.119$ indicates that approximately 11.9% of climate change was affecting the quality of life. Therefore, it was concluded that climate change (independent variables) had no influence on the quality of life (dependent variable) on Temiar indigenous community. The significant Sig.F value shown <0.01, hence this study demonstrated there is still a statistically relationship between the climate change (independent variable) and the quality of life (dependent variable) on the Temiar indigenous community. Overall, the indigenous communities' quality of life was multifaceted and complicated, and it's not exclusively influenced by climatic elements.

This trend was observed among the Sámi indigenous people in northern Scandinavia. Timlin et al., (2021) reported the Sámi indigenous groups in northern Scandinavia were shown to have a minimal statistical correlation between climatic change and their well-being despite the environmental challenge. Tyler et al. (2021) found that, while the Sámi reindeer herders are very vulnerable to impacts of climate change (e.g., shifting snow patterns, vegetation changes), their opinion of quality of life remains resilient. Same as the Temiar community, The Sámi, adapted to environmental pressures using non-linear coping methods and prioritised the significance of self-determination and cultural preservation over physical or economic indicators (Jaakkola et al., 2018).

Similarly, Hosen et al., (2020) examined the viewpoints of indigenous communities in the Kinabatangan region of Sabah regarding the effects of climate change and their adaptive strategies. Based on the research, these communities rely heavily on the Kinabatangan River and the ecosystems, are suffering from the negative consequences of climatic anomalies, such as frequent flooding, extended droughts, and biodiversity loss. Despite these difficulties, socioeconomic factors, cultural values, and resource accessibility had a higher impact on communities' climate adaptation encouragement and participation than direct environmental changes. Pimid et al., (2022) stated the importance of utilising indigenous knowledge and community participation will be resulting in building effective climate adaption measures.

The quality of life of Temiar indigenous community influenced by various sociocultural, spiritual, economic, and environmental elements. Although the genuine threats posed by climate change, like changing precipitation patterns, increasing temperatures, and disruptions to traditional food sources, its immediate effect on individuals' assessments of their quality of life may not be apparent. The community could adapt to environmental changes in non-linear and culturally established manners due to their social resilience, traditional ecological knowledge, and robust social cohesion.

Besides, indigenous perspectives on well-being can differ from the typical well-being measures used in academic studies. The Temiar community's understanding of well-being may be more significantly shaped by their spiritual connections to the land, preservation of legacy, and harmonious communal relationships than by economic or physical metrics affected by climate change. The gap between indigenous perspectives and measurement tools may contribute to the observed diminished statistical correlation. To accurately clarify the multifaceted and interconnected impacts of climate change on indigenous populations such as the Temiar, next research should employ qualitative methodologies and incorporate culturally relevant indicators.

CONCLUSION

In summary, this research investigated the impact of climate change on quality of life of the Temiar indigenous people and observed the role of resilience together with the traditional knowledge in shaping their adaptative strategies. Although the Temiar community faces a number of environmental stresses, including deforestation, shifting weather patterns, and economic vulnerabilities, the results show that these factors do not substantially lower their subjective quality of life. Significantly, the Relative Importance Index (RII) found that the most valued aspects of well-being were air quality (RII = 0.820), health satisfaction (RII = 0.824) and public safety (RII = 0.866), which suggests that the Temiar people's resilience based on their close relationship with nature, traditional ecological knowledge, and strong community's social resilience.

Quality of life and climate change only had a weak direct association, according to regression analysis ($R^2 = 0.119$), suggesting that other ecological, social, and cultural aspects are more important. These adaptive capacities promote the community's ability to maintain well-being and function as a buffer against the most severe impacts of climate change. The significance of inclusive, culturally based climate adaption plans that respect indigenous knowledge systems and social structures is confirmed assuring that development and environmental governance initiatives are in line with the reality and values of indigenous peoples. Indigenous communities like the Temiar need to strengthen their ecological practices and social resilience to align with goals like SDG 3 (Good Health and Well-Being), SDG 13 (Climate Action), and SDG 15 (Life on Land).

IMPLICATION OF THE STUDY

This research brought importance implications for community-based initiatives and policy development. Firstly, the findings underscore the significance of social resilience and traditional ecological knowledge (TEK) in the Temiar indigenous community's capacity to endure and adjust to environmental change. Although the negative consequences of climate change like floods, drought, and others environmental challenges, the community maintains a high quality of life. This demonstrates that resilience is more than just material conditions; it is also profoundly established in community unity, cultural practices, and a strong connection to the environment.

Second, the study emphasises the necessity for culturally aware and inclusive climate adaptation policy. As the regression analysis showed that the direct impact of climate change on perceived quality of life is only slight ($R^2 = 0.119$), it is clear that other sociocultural and spiritual elements have equally or even more of a direct effect. Therefore, in order to be genuinely effective, climate adaptation methods need to be comprehensive and take into account indigenous perspectives and knowledge systems.

In addition, this study supports the Sustainable Development Goals (SDGs) of the UN, including SDGs 3 (Good Health and Well-Being), 13 (Climate Action), and 15 (Life on Land). The relationship between indigenous resilience, community well-being, and environmental sustainability is supported by empirical data analysed in this research. Besides, it also highlights the importance for giving indigenous voices greater representation in environmental governance. Thus, incorporating indigenous knowledge into decision-making procedures can promote more culturally relevant, egalitarian, and adaptable solutions to climate concerns.

LIMITATIONS AND RECOMMENDATION FOR FUTURE RESEARCH

One of the limitations is the dependence on the quantitative approach. The cultural complexity and complex views of well-

being for the Temiar community may not be well captured by the use of standardised measures and questionnaires. To further comprehend indigenous experiences and values, future research should include qualitative techniques like participatory methods, in-depth interviews, and ethnographic investigations. Furthermore, the regression analysis's low R^2 value (0.119) suggests that a large portion of the variation in quality of life cannot be entirely attributed to climate change alone. This demonstrates the complexity of well-being, which is impacted by a range of social, spiritual, cultural, economic, and environmental elements. Future research has to consider creating multivariate models that incorporate elements like social capital, land attachment, spirituality, and governance involvement. Community reactions to climate change and its effects are shifting throughout time. Future studies should investigate how indigenous communities' ability to adapt to climate-related difficulties is impacted by their access to government assistance, healthcare, education, and disaster response.

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Sustainable Development through Community Involvement in Tourism Planning: The Role of Ecotourism Motivation and Empowerment

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ABSTRACT

This study analyses the nexus between natural attraction, ecotourism motivation, social, psychological and political empowerment, community involvement in tourism planning, and support for sustainable ecotourism development. Underpinned by ecological modernisation and empowerment theories, this study addresses the lack of community participation, especially in the context of nature-based destinations and ecotourism. Such dynamics are important to analyse, given that communities are considered vital cogs in the collaborative governance and sustainability of the ecotourism industry. Using the quantitative research design with purposive sampling, the study examined four hundred four (404) responses via Partial-least Square-Structural Equation Modelling (PLS-SEM) assessment. The study found that natural attraction significantly influences ecotourism motivation. The latter construct negatively affects community involvement in tourism planning, with social empowerment as a significant moderator. The result concludes that community involvement in tourism planning has a significant influence on sustainable ecotourism development. Theoretically, this study is novel in its application of ecological modernisation

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theory within the context of tourism, particularly in wetland-based destinations, and in integrating empowerment theory to examine how distinct empowerment dimensions shape community involvement. These findings offer valuable and unique insights into the psychological behaviour of communities regarding tourism destination planning and development.

Keywords: Community involvement, ecological modernisation theory, ecotourism motivation, empowerment, natural attraction, support for sustainable tourism development, tourism planning

INTRODUCTION

The growth of sustainable tourism has been monumental in the last three decades, and most empirical and conceptual works have focused on tripartite components of the environment, sociocultural, and economy (Nunkoo & So, 2016; Zakaria et al., 2024). In establishing a model of sustainable tourism development, communities have always been one of the main actors analysed in the context of anticipated industry advantages and disadvantages relative to the tripartite components (see Eslami et al., 2019). This is because sustainable tourism development depends on involved and supportive communities to stay competitive in the contemporary, dynamic, and diverse tourism market (Aleshinloye et al., 2021). Communities are considered the main stakeholders in tourism development, given their behaviours and attitudes, which are pivotal factors in shaping the destination's achievement and sustainability (Li et al., 2022). This represents the position of collective decision-making between the tourism stakeholders since bottom-up approaches are increasingly understood as critical to sustainable tourism development (Azwar et al., 2023).

In this vein, soliciting the community's backing and understanding is deemed to be germane to all tourism actors to establish viable and sustainable tourism planning (Aleshinloye et al., 2021; Azwar et al., 2023). To assess the extent of their support for tourism, many scholars begin with the communities' belief in travel and the formulation of their perceptions of the industry and its following development (Gannon et al., 2021). This illustrates the heightened need for communities' support for sustainable tourism development, considering that they are the primary beneficiaries of the expected pros and cons of the industry (Zaman & Aktan, 2021).

Based on this premise, it is crucial to consider the impact that tourism has on the community in the context of destination management. If the negative impact outweighs the positive impact, it can lead to friction between communities and tourists and potentially harm the community's way of life (Zakaria et al., 2024). Some communities may view tourism development negatively due to concerns about negative effects on local heritage, culture, and the environment. On the other hand, others may see it as a source of positive effects such as enhanced employment prospects, increased tax

revenue, income from abroad, the formation of local businesses, and better profits (Seraphin et al., 2019). Such dynamics may shape the community's involvement in the decision-making and execution of tourism policies since the design of the power structures and processes is a necessity in tourism governance (Bichler, 2021; Dedeoğlu et al., 2023).

This explicates the increasing volume of empirical works on different levels of community support for tourism development, as a plethora of attributes were analysed in various rural and urban settings. The attributes include place image (Zaman & Aktan, 2021), community attachment (Eslami et al., 2019), perceived value and impact (Tosun et al., 2021), cultural attitudes (Gannon et al., 2021), community identity, attitudes, and satisfaction (Ramkissoon & Nunkoo, 2011). Furthermore, it is worth noting that a substantial body of literature has separately assessed the general status of sustainable tourism and its impact on the satisfaction of both residents and tourists in ecotourism and nature-based settings, including studies applying the Prism of Sustainability model, which extends the conventional economic, ecological, and sociocultural dimensions with an institutional dimension (Gong et al., 2023; Spangenberg, 2002). Despite the scale of empirical evidence in this area, there is still a scarcity of studies centred on the antecedents of community involvement and their support for tourism development in an ecotourism destination. Underexplored and understudied, Ali et al. (2020) review of modern empirical literature highlights the need for more natural environment-related determinants of community involvement in tourism planning and its outcome. They also highlighted specifically the need for more empirical explorations on the dynamics between natural attraction and the underlying motivation that subsequently shapes community involvement in tourism planning.

Such need stems from the possibility of the communities becoming ambassadors if there is an increased consciousness of their environments' positive elements (Aleshinloye et al., 2021). Since communities are considered a vital cog in the success of the ecotourism industry, it is postulated that their involvement in planning and development is crucial in creating an empowered community, which is needed in collaborative governance and sustainability efforts to promote tourism (Ali et al., 2020; Aleshinloye et al., 2021). Accordingly, such dynamics have motivated the current paper to analyse a conceptual model that illustrates how empowerment can moderate the community's motivation for ecotourism and their involvement in tourism planning. The model starts with natural attractions and examines how they contribute to this relationship, ultimately leading to community support for sustainable tourism development. To support all the proposed interrelationships, the theories of ecological modernisation (EMT) and empowerment are used to establish a coherent and rational theoretical framework that explains the model. While EMT and empowerment

theory jointly assume that heightened environmental awareness and empowerment translate directly into greater community participation, this assumption has rarely been tested against the structural realities of formal tourism planning systems, where participatory ideals are often constrained by bureaucratic barriers and top-down governance arrangements (Bichler, 2021; Osman et al., 2018). This unresolved tension between theory and governance practice constitutes the specific theoretical gap this study addresses, as it remains unclear whether, and under what conditions, motivated and empowered communities actually translate their disposition into formal involvement in tourism planning.

With this in mind, the following section addresses the literature review of the key constructs before dissecting the role of EMT and empowerment theory in detail. The paper then discusses the development of hypotheses, methodology, and study results. In conclusion, the paper includes a discussion that addresses both theoretical and practical implications.

LITERATURE REVIEW

Natural Attraction and Ecotourism Motivation

The appeal of natural tourism stems from the availability of diverse natural attractions, which are shaped by the beauty and distinctiveness of natural resources and the socio-cultural heritage of local communities. These attractions encompass many landscapes, including mountains, lakes, forests, and beaches, all home to rich biodiversity and wildlife (Connell et al., 2015). Nature-based attractions are particularly significant in ecotourism as they drive tourism-related activities and contribute to economic growth (Ali et al., 2020). Furthermore, these attractions are essential in encouraging local community participation in ecotourism initiatives, ultimately fostering long-term sustainability and conservation efforts (Ali et al., 2020).

Accordingly, motivation is critical in driving such participation in tourism activities, as it is often perceived as a psychological need and desire that triggers behavioural responses (Belly et al., 2024; Pearce, 2013). Motivation takes on additional dimensions within ecotourism, as it is closely linked to environmental responsibility, cultural appreciation, and community well-being. This is consistent with the aim of ecotourism, which is to minimise the negative ecological impacts of tourism while enhancing the well-being of local communities, making it a key motivator for regional participation in tourism development (Agaliotou et al., 2019).

Community Empowerment

Empowerment involves individuals or groups striving to shape their circumstances by increasing their internal strength and ability to influence their surroundings in response to external factors (Strzelecka et al., 2017). It enables communities to articulate their perspectives and advocate for initiatives contributing to their well-being and success.

Through this process, communities become active agents in decision-making, problem-solving, and implementing resolutions, positioning themselves at the highest level of participation (Boley & McGehee, 2014). In sustainable tourism, ecotourism should empower local communities, enabling them to gain from tourism activities and participate in shaping their socio-economic progress (Das & Chatterjee, 2020).

Scheyvens (1999) made a significant contribution to tourism literature by introducing the concept of empowerment, which encompasses four key dimensions comprise of economic, social, political, and psychological. Building on this foundational premise, the Resident Empowerment through Tourism Scale (RETS) was created by Boley and McGehee (2014), which incorporates tripartite components of psychological, social, and political empowerment. Since its inception, the employment of RETS has increased, and it is considered to be one of the extensively operationalised measures of the concept of empowerment within the realm of tourism (Aghazamani & Hunt, 2017). In fact, such employment has been demonstrated using the scale as a precursor to various outcome measures (Aleshinloye et al., 2021).

These dimensions are particularly significant in ecotourism since they ensure active participation from the community and enhance its importance (Tang & Wang, 2017). Accordingly, psychological empowerment is reflected in the self-esteem of individuals and groups, which strengthens as they gain recognition for their unique identities, cultural values, traditional knowledge, and natural resources (Hidayat, 2017). Political empowerment, on the other hand, ensures that governance structures are equitable and responsive to the diverse requirements and concerns of all community groups (Scheyvens & Watt, 2021). While social empowerment is crucial in fostering community structure and integrity, strengthening social bonds and collective resilience (Butler, 2017).

Community Involvement and Support for Sustainable Tourism Development

Community engagement entails bringing residents together to achieve shared objectives, enhance the local area, and pursue personal aspirations (Rasoolimanesh et al., 2017). Local communities are directly affected, both positively and negatively, by tourism growth and the resulting interactions (Strickland-Munro et al., 2010), and these transformations can influence community values, lifestyles, and overall quality of life (Hu et al., 2022). Tourism planning should be a primary focus and be adopted and practised extensively within a community (Chatkaewnapanon & Lee, 2022). Besides, Osman et al. (2018) suggested that protecting nature and culture to benefit residents, along with the involvement of local communities, relevant stakeholders, and government bodies, is crucial for the success of ecotourism.

Furthermore, sustainable tourism's success largely depends on residents' active participation and support, making their involvement a critical factor in its

development. Research indicates that community members are generally more favourable towards tourist development when they perceive it as a catalyst for financial increase (Linderová et al., 2021). This highlighted the importance of residents' support for sustainable tourism, underscoring that their involvement in decision-making is crucial in ensuring long-term tourism sustainability.

Underpinning Theory

Introduced by sociologists like Joseph Huber, Martin Jänicke, and Udo Simonis in the 1980s, EMT was initially sought to frame the dynamics of environmental policies in Western Europe (Jänicke, 2008). Over the years, however, it has transformed into a broader theory of social change and political strategy (Sezgin, 2013). At its core, EMT posits that environmental challenges found in the existing socio-economic and political framework can be addressed by modernising and restructuring economies at both micro and macro levels. This involves weaving ecological considerations into production, consumption, and policymaking, harmonising environmental and economic rationalities (Mol, 1995). In recent years, the principles of ecological modernisation have captured global attention, emerging as a pivotal approach to sustainable development. According to Ali et al. (2020), a significant application of this theory is found in tourism, particularly in concepts such as sustainable tourism and ecotourism, which closely align with the principles of EMT. This connection arises from the understanding that the natural attractions of an ecotourism destination are fundamentally nature-based resources. These resources involve human interaction in the shape of community participation and illustrate how EMT supports these dynamics. Nevertheless, EMT's optimistic assumption that modernised, participatory structures will automatically translate environmental awareness into community action rests on the premise of accessible and responsive governance arrangements. Where this premise does not hold, the theory itself points to a boundary condition rather than a contradiction.

To draw a more comprehensive picture of this dynamic, the empowerment theory is integrated to further extend the application of EMT in ecotourism via a showcase of the moderating effects of politics, psychology, and society. Integrating empowerment theory can be linked to its application within the tourism literature, which is widely recognised as a critical element of sustainable tourism (Boley & McGehee, 2014). Specifically, empowerment theory has proven valuable in shedding light on the perceptions of the residents on their empowerment and how such feelings shape their decisions regarding activities within the realm of tourism, namely advocating for proper tourism development (Gautam & Bhalla, 2024). Therefore, merging empowerment theory with EMT is considered a novel and coherent approach. Since empowerment theory focuses on human interaction as well, it serves as a useful framework for exploring its impact on individuals' decision-making in tourism (Aleshinloye et al., 2022).

Beyond the general premise of EMT and empowerment theory, this study also draws on the concept of participatory governance to explain why increased motivation may not automatically translate into greater community involvement. Participatory governance emphasises the co-design of power structures and decision-making processes between the state, private actors, and communities, positioning residents as genuine partners rather than passive recipients of tourism policy (Bichler, 2021). However, the practical realisation of participatory ideals is frequently constrained by bureaucratic barriers embedded within formal planning systems, including rigid administrative procedures, unclear channels for community input, and the dominance of top-down decision-making structures (Osman et al., 2018). Such structural constraints can create a disconnect between the community's underlying motivation to engage with ecotourism and their actual involvement in formal tourism planning processes, as motivated residents may perceive limited opportunities for their participation to have meaningful influence over planning outcomes (Dedeoğlu et al., 2023). This tension between motivation and structurally-limited participation provides a theoretical basis for anticipating that the relationship between ecotourism motivation and community involvement in tourism planning, as well as its interaction with community empowerment dimensions, may not always follow the straightforward positive pattern assumed within EMT and empowerment theory.

Community-based tourism (CBT) further complements this discussion, as it conceptualises local communities not merely as beneficiaries of tourism development but as principal agents responsible for planning, managing, and benefiting from tourism activities within their own locality (Azwar et al., 2023). CBT approaches emphasise fusing local wisdom, customary decision-making structures, and cooperative arrangements with formal governance mechanisms, a proposition particularly relevant to ecotourism destinations such as wetlands, where the sustainability of natural resources is closely intertwined with the community's everyday livelihood practices (Chatkaewnapanon & Lee, 2022). Situating the current study within the CBT literature reinforces the argument that community involvement in tourism planning cannot be assumed to increase linearly with motivation or empowerment alone but is also shaped by the extent to which formal planning structures accommodate community-driven, bottom-up governance mechanisms.

Hypotheses Development

Natural attractions encompass key environmental elements that contribute to the distinctiveness of a destination. These include scenic landscapes, the presence of wildlife in their natural habitats, and prominent geographical features such as rivers, forests, and mountains (Connell et al., 2015). Beyond attracting tourists, these natural features are pivotal in fostering ecotourism engagement within local communities by encouraging participation

in tourism-related activities, conservation efforts, and sustainable economic initiatives. Local residents in tourist destinations constitute a key stakeholder group due to their deep-rooted connections to these locations (Ribeiro et al., 2017). Living in or near these destinations, their daily activities and recreational behaviours directly influence the surrounding natural environment.

As an integral part of the tourism landscape, residents' perspectives and actions can significantly impact the reputation and long-term sustainability of the destination (Wang et al., 2019). When local communities recognise the value of their natural surroundings, they may be more inclined to engage in ecotourism, actively participate in conservation efforts, and support responsible tourism practices that enhance both the visitor experience and the ecological health of their environment. This is an illustrative of motivation, which is crucial in ecotourism since it drives human actions, pushing them to behave in specific ways (Line & Costen, 2017). Furthermore, the real essence of tourism development is embedded in the intangible values derived from a deep connection to place and personal enrichment (Strzelecka et al., 2017). Based on this notion, the following hypotheses are suggested:

> H_1: The community's perceived attractiveness of the natural environment positively influences their ecotourism motivation.

Ecotourism thrives when it is based on an inclusive process where communities actively engage in decision-making, formulation, and execution of tourism initiatives (Wang et al., 2015). When communities are involved at every stage of ecotourism development, whether in policy monitoring, daily tourism operations, or environmental education, they build trust and enhance the outcomes of these initiatives (Sobhani et al., 2022). This highlights how communities become invested in preserving their environment when they recognise tangible benefits and are seen as essential contributors to ecotourism. Community-led ecotourism fosters informed decision-making, effective impact management, and the creation of local businesses, all while enhancing vital services like infrastructure, education, and healthcare (Butcher, 2005). Therefore, when the motivations behind ecotourism align alongside the necessities and aspirations of local communities, it paves the way for impactful participation in tourism planning, driving sustainability and empowering individuals to shape their futures. Nonetheless, as discussed above, this positive translation of motivation into involvement is contingent on the accessibility of participatory governance structures. Where bureaucratic barriers constrain the community's channels for input, motivated residents may instead disengage from formal planning processes (Bichler, 2021; Osman et al., 2018). Accordingly, it is assumed that:

> H_2: Ecotourism motivation influences community involvement in tourism planning.

Political empowerment occurs when a community is actively engaged in tourism and affects the decision-making processes in their region (Wiyono et al., 2023). This empowerment enhances residents' motivation by giving them complete authority over decisions and discussions, fostering genuine participation (Shen et al., 2022). Besides, when people are motivated from within, their behaviours tend to be more consistent and sustained, leading to improved outcomes (Bin Saeed, 2019). This reflects how tourism can give residents a sense of political influence, promoting greater political involvement in decision-making, irrespective of the community's inclination, and perception of tourism within their vicinity (Joo et al., 2020). Thus, political empowerment may act as a significant moderating factor that strengthens the connection between ecotourism motivation and community participation, ultimately leading to more inclusive and sustainable tourism planning.

Similar dynamics can be observed for psychological and social empowerment. Psychologically, tourism increases awareness among visitors about the value and appeal of natural areas near the communities they visit. This acknowledgement contributes to heightened pride and self-esteem among local residents. Deemed as one of tourism's most significant non-economic benefits, both pride and self-esteem are posited to contribute to the residents' well-being (Strzelecka et al., 2017). Recognising such benefits, many communities are drawn to ecotourism because of its potential to enhance their quality of life (Rachamawati & Fountain, 2020). With this motivation, residents play a crucial function in determining tourism development within their communities, creating an opportunity to maximise the benefits while minimising any negative effects (Gannon et al., 2021). As community members actively participate in decision-making processes, engage in knowledge sharing, and commit to collective goals, they enhance overall satisfaction and promote sustainable tourism practices (Jusoh & Ahmad, 2018).

However, the level of involvement often hinges on residents' sense of social empowerment. When residents feel empowered, they can collaborate effectively, strengthening community ties and boosting engagement in tourism initiatives (Boley et al., 2014). Moreover, it helps forge social bonds and fosters cross-cultural understanding, which further deepens community engagement (Lv et al., 2021). A vital component of this dynamic is social trust, which encourages individuals to cooperate and get involved in collective efforts (Chang & Chuang, 2011). When residents feel connected to key stakeholders, they are more inclined to play a dynamic role in the decision-making and planning processes (Azwar et al., 2023). Yet, drawing on the participatory governance and CBT perspectives discussed earlier, it is equally plausible that strongly empowered communities with robust internal social networks come to rely on their own informal, cooperative decision-making channels, viewing bureaucratic,

formally structured planning avenues as redundant or unresponsive to their needs (Bichler, 2021; Gutierrez, 2023). Drawing from the overall discussion, the subsequent hypotheses are introduced:

H_3: Political empowerment moderates the relationship between ecotourism motivation and community involvement in tourism planning.

H_4: Psychological empowerment moderates the relationship between ecotourism motivation and community involvement in tourism planning.

H_5: Social empowerment moderates the relationship between ecotourism motivation and community involvement in tourism planning.

When residents actively use their resources, they unlock access to job opportunities and establish their tourism-related enterprises (Kia, 2021). As communities begin to recognise the myriad benefits of sustainability, they are more inclined to champion and propel tourism initiatives forward. Evidence shows that when locals participate in tourism planning and management, it cultivates a positive outlook toward tourism, strengthening community support for its development (Azwar et al., 2023). Furthermore, with the inclusion of cultural practices, community values, and traditional knowledge, a tourism model is emerging that is environmentally sustainable, culturally educational, and economically feasible (Emelie, 2024). Integrating this local wisdom with sustainable tourism strategies ensures that development resonates alongside the community's values and heritage, setting the premise for long-term sustainability. Building upon the discussion, the subsequent hypotheses are proposed:

H_6: Community involvement in tourism planning influences community support for sustainable ecotourism development.

Figure 1 illustrates the research model and the hypothesised causal effect between the study constructs. The EMT and empowerment theory underpins the study framework.

METHODS

This study conducted a quantitative, cross-sectional design to investigate the relationship between natural attraction, ecotourism motivations, and tripartite dimensions of empowerment—political, psychological, and social—as well as community involvement in tourism planning and their support for sustainable tourism development. The research focuses on the local community, with the Setiu Wetland in Terengganu, Malaysia, serving as the research setting. The Setiu Wetland, the biggest natural wetland on the East Coast of Peninsular Malaysia, encompass diverse ecosystems, including freshwater, seawater, brackish water, and a 14 km lagoon (Terengganu State Parks Management Council, 2025). Due to its size and ecological diversity, the wetland requires

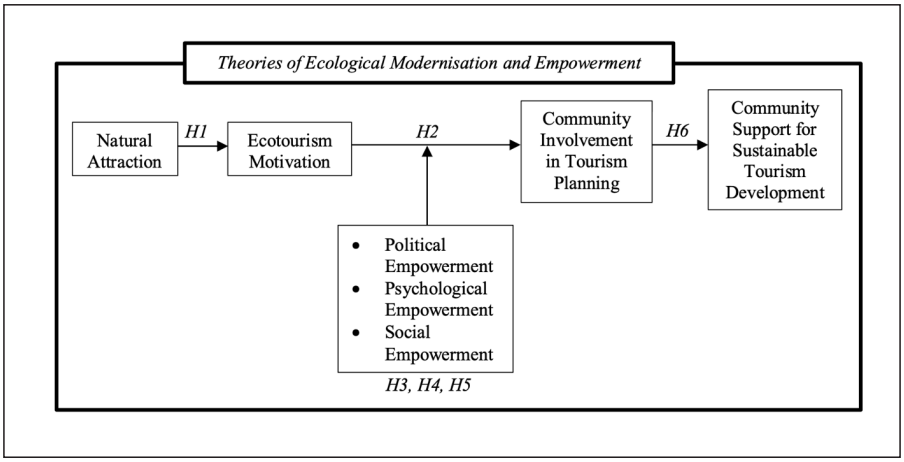

Figure 1. Research model
Source: Authors' own work

careful investment of time, resources, and management to achieve sustainable ecotourism development.

The strong integration of ecotourism with local livelihoods, particularly through fishing, aquaculture, handicrafts, and community-led tourism initiatives, provides a valuable context for exploring these relationships. Additionally, a report from the Terengganu State Department of Urban and Regional Planning outlines a comprehensive development framework that extends to the year 2035, emphasising a balance between conservation efforts and sustainable tourism growth. This makes the Setiu Wetland a suitable case study for understanding how community engagement influences support for sustainable ecotourism development (see PlanMalaysia@Terengganu, 2022).

According to the report, the 15 villages identified as key components for developing Setiu Wetlands are located across three sub-districts: Pantai, Chalok 2, and Hulu Setiu (Table 1).

The total population of these villages is 12,025 people, and the required sample size was decided using Krejcie and Morgan's (1970) table, leading to a sample of 375 respondents. To enhance representativeness across all villages, an additional 10 percent was added to the initial sample size, bringing the sample size to 416. The questionnaires include three screening test questions and the respondents' demographic profiling to validate the respondents' inclusion criteria. The details of the sections in the questionnaire are illustrated in Table 2.

Five-point Likert scales ranging from one (strongly disagree) to five (strongly agree) were employed for measurement. Two tourism scholars established face validity, and a pilot study was undertaken with 20 local communities to gauge its reliability. The face validity assessment resulted in minor item modifications to ensure clarity. Next, the pilot assessment produced Cronbach's Alpha values over the required cut-off of 0.70 for all research constructs.

Table 1
Sample size detail

No.	Village	Total Population (A)	Sample Size According to Krejcie and Morgan (1970) *	Additional 10% Sample Size	Final Usable Sample Size Collected
		Pantai Sub-District			
1.	Fikri	861	27	30	31
2.	Padang Saujana	615	19	21	14
3.	Gong Batu	500	16	18	17
4.	Kuala Setiu (Pengkalan Gelap)	200	6	7	22
5.	Saujana	3680	115	128	25
6.	Mangkok	650	20	22	28
		Chalok 2 Sub-District			
7.	Bari Kecil	520	16	18	18
8.	Bari Besar	730	23	25	29
9.	Rhu Sepuluh	702	22	24	30
10.	Penarik Baru	330	10	12	35
11.	Penarik	520	16	18	30
12.	Pandan Jaya	769	24	26	34
13.	Beris Tok Ku	580	18	20	21
14.	Telaga Papan	948	30	33	47
		Hulu Setiu Sub-District			
15.	Padang	420	13	14	23
Total		12,025 (B)	375 (C)	416	404

Note. *To calculate the sample size according to Krejcie and Morgan's (1970) recommendation, the following formula is used: A/B x C.
Source: Authors' own work

Table 2
Questionnaire items

Constructs	No. of Items	Source
Natural Attraction (NA)	3	Ali et al. (2020)
Ecotourism Motivation (EM)	3	Ali et al. (2020)
Political Empowerment (POLEMP)	3	Aleshinloye et al. (2021)
Psychological Empowerment (PSYEMP)	5	
Social Empowerment (SOCEMP)	3	
Community Involvement in Tourism Planning (CI)	3	Aleshinloye et al. (2021)
Community Support for Sustainable Tourism Development (CSUPP)	5	Eslami et al. (2019)

Source: Authors' own work

The questionnaire was administered in person in Setiu Wetland over a three-month period from October to December 2023. The study conducted a multistage non-probability sampling method centred on the systematic allocation of the respondents based on proportional representation from each village. This is followed by filtering the valid participants who had relevant knowledge about ecotourism and the development planning for tourism in Setiu Wetland (see Bougie & Sekaran, 2019). This approach was essential for ensuring data quality and validity.

Then, the collected data was cleaned, coded, and analysed using SPSS version 24 software. A total of 404 valid responses were recorded, with 47.5% being men and 52.5% women, with the majority being self-employed (44.6%). Most respondents were between 35 and 49 years old (26.2%), were high school leavers (39.9%) and generated an income of less than RM1,000 (53.7%). This income distribution reflects the broader socio-economic profile of the Setiu Wetland villages, where fishing, small-scale aquaculture, and informal or seasonal tourism-related work remain in the primary livelihoods. The predominance of self-employed, lower-income respondents is therefore consistent with the study's target population and should be taken into account when interpreting the generalisability of the findings to other, more urbanised or economically diversified ecotourism destinations. To remove common method bias (CMB), this study adheres to Podsakoff et al.'s (2003) suggestion, where Harman's single-factor test is employed. Accordingly, the results indicated that the primary factor did not account for a dominant portion of the variance, suggesting that CMB is unlikely to significantly affect the study's results.

Then, Partial Least Squares Structural Equation Modelling (PLS-SEM) was implemented to test the study hypotheses in two stages. The first stage involved evaluating the measurement model to ensure the reliability and validity of the measures used. In the second stage, the structural relationships among the latent constructs were analysed. PLS-SEM was selected for this study due to its attributes, which enable it to verify theoretical and causal models, predict relevance, and align with current trends among researchers in the tourism field (Sarstedt et al., 2020). Additionally, the proposed conceptual framework is complex, integrating political, psychological, and social empowerment as tripartite mediators. Thus, PLS-SEM is an appropriate technique for addressing such complex models (Hanafiah, 2020). Moreover, the research data did not meet normality assumptions, making PLS-SEM a proper choice for studies with non-normal distributions (Hair Jr. et al., 2017). For the data analysis, SmartPLS version 4 software was utilised.

RESULTS

PLS-SEM Measurement Model

The measurement model results are presented in Table 3. Factor loadings, composite reliability (CR), Cronbach's alpha,

Table 3
Measurement model assessment

Constructs	Loadings	Cronbach's Alpha	Composite Reliability	AVE
Natural Attraction (NA)		0.812	0.914	0.711
NA1	0.783			
NA2	0.887			
NA3	0.855			
Ecotourism Motivation (EM)		0.814	0.836	0.730
EM1	0.786			
EM2	0.909			
EM3	0.864			
Political Empowerment (POLEMP)		0.881	0.891	0.809
POLEMP1	0.853			
POLEMP2	0.948			
POLEMP3	0.896			
Psychological Empowerment (PSYEMP)		0.886	0.928	0.665
PSYEMP1	0.885			
PSYEMP2	0.871			
PSYEMP3	0.870			
PSYEMP4	0.678			
PSYEMP5	0.751			
Social Empowerment (SOCEMP)		0.860	0.894	0.779
SOCEMP1	0.832			
SOCEMP2	0.913			
SOCEMP3	0.900			
Community Involvement in Tourism Planning (CI)		0.812	0.816	0.727
CI1	0.872			
CI2	0.875			
CI3	0.810			
Community Support for Sustainable Tourism Development (CSUPP)		0.881	0.909	0.666
CSUPP1	0.782			
CSUPP2	0.759			
CSUPP3	0.834			
CSUPP4	0.818			
CSUPP5	0.881			

Note. See Appendix 1 for the details on each item
NA = Natural Attraction, EM = Ecotourism Motivation, POLEMP = Political Empowerment, PSYEMP = Psychological Empowerment, SOCEMP = Social Empowerment, CI = Community Involvement in Tourism Planning, CSUPP = Community Support for Sustainable Tourism Development
Source: Authors' own work

and average variance extracted (AVE) are employed to evaluate the reliability of the research constructs. A reliable scale is indicated by factor loadings greater than 0.70, along with CR and Cronbach's alpha values exceeding the minimum threshold of 0.70. Nevertheless, a loading score between 0.40 and 0.70 is acceptable if the CR and AVE meet the required thresholds (Rasoolimanesh et al., 2019). Regarding convergent validity, the AVEs surpass the minimum 0.50 (Hanafiah et al., 2021).

Next, the heterotrait-monotrait (HTMT) correlation ratio was utilised to test the discriminant's validity. All the HTMT values were below 0.90, thus verifying the scales' discriminant validity as per Ringle et al. (2015) (Table 4).

PLS-SEM Structural Model

In the second step, the structural model assessment was executed. The path analysis (Table 5) between natural attraction and ecotourism motivation (H_1) ($\beta = 0.417^{***}$) has a significant positive relationship. This is contrary to the dynamics between the latter construct and community involvement in tourism planning, where the pattern of the significant influence is negative (H_2) ($\beta = -0.100^{*}$). In terms of the moderating effect of political (H_3) ($\beta = 0.077$), psychological (H_4) ($\beta = 0.055$) and social empowerment (H_5) ($\beta = -0.149^{***}$), only the latter construct has a significant negative impact on the relationship between ecotourism motivation and community involvement in tourism planning. Lastly, community involvement in tourism planning (H_6) ($\beta = 0.233^{***}$) has a statistically significant influence on their support for sustainable tourism destination development. Overall, the results show that H_1, H_2, H_5, and H_6 are supported.

Regarding model fitness (Table 5), it can be established that natural attraction can statistically significantly explain the 17.4% (R^2= 0.174) variance of ecotourism motivation. Subsequently, ecotourism motivation and the tripartite dimensions of empowement (political, psychological and social) can statistically significantly explain the 49.8% (R^2= 0.498) variance of community involvement in tourism planning. As for the community support for sustainable tourism development, only 5% (R^2= 0.05) of its variance can be attributed to the constructs in the research model. Moving on to the effect size, the structural model reveals a medium effect size for natural attraction and ecotourism motivation (f^2=0.211). The other relationships, which comprise ecotourism motivation (f^2=0.013) along with its interaction effect on the political (f^2=0.008), psychological (f^2=0.004) and social empowerment (f^2=0.024) toward community involvement with tourism planning, are recorded to have a small effect size. This is also the case for the effect of size of community involvement in tourism planning (f^2=0.053) on their support for sustainable tourism development.

As for the model's predictive relevance, the Q^2 values are above zero for all frameworks comprising the interrelationship between natural attraction, ecotourism

Table 4
Heterotrait-Monotrait ratio (HTMT)

	CI	CSUPP	EM	NA	POLEMP	PSYEMP	SOCEMP
CI							
CSUPP	0..806						
EM	0.801	0.815					
NA	0.493	0.574	0.772				
POLEMP	0.680	0.714	0.758	0.692			
PSYEMP	0.642	0.617	0.625	0.560	0.633		
SOCEMP	0.522	0.582	0.683	0.746	0.761	0.584	

CI = Community Involvement in Tourism Planning, CSUPP = Community Support for Sustainable Tourism Development, EM = Ecotourism Motivation, NA = Natural Attraction, POLEMP = Political Empowerment, PSYEMP = Psychological Empowerment, SOCEMP = Social Empowerment
Source: Authors' own work

Table 5
Structural estimates (path analysis)

	Beta (β)	T-Statistics	P-Values	f^2	R^2	Q^2
H_1: NA -> EM	0.417***	7.029	0.000	0.211	0.174	0.447
H_2: EM -> CI	-0.100*	2.101	0.036	0.013	0.498	0.441
H_3: EM *x* POLEMP -> CI	0.077	1.828	0.068	0.008		
H_4: EM *x* PSYEMP -> CI	0.055	1.460	0.144	0.004		
H_5: EM *x* SOCEMP -> CI	-0.149***	3.632	0.000	0.024		
H_6: CI -> CSUPP	0.233***	6.136	0.000	0.053	0.050	0.497

Note. *** p<0.001, **p<0.01, *p<0.05
NA = Natural Attraction, EM = Ecotourism Motivation, POLEMP = Political Empowerment, PSYEMP = Psychological Empowerment, SOCEMP = Social Empowerment, CI = Community Involvement in Tourism Planning, CSUPP = Community Support for Sustainable Tourism Development
Source: Authors' own work

motivation, and tripartite dimensions of empowerment (political, psychological, and social), as well as community involvement in tourism planning and their support for sustainable tourism development. Given the predictive relevance outputs, it can be concluded that all frameworks tested in the study can be recognised as substantial predictive models, per Henseler et al. (2012).

To further clarify the direction and strength of the significant negative moderating effect of social empowerment (H_5), a simple slope plot was generated directly in SmartPLS 4 using the two-stage moderation approach, following the conventional low (-1 SD), mean, and high (+1 SD) moderator-level approach (Figure 2). As illustrated, when social empowerment is low, the relationship

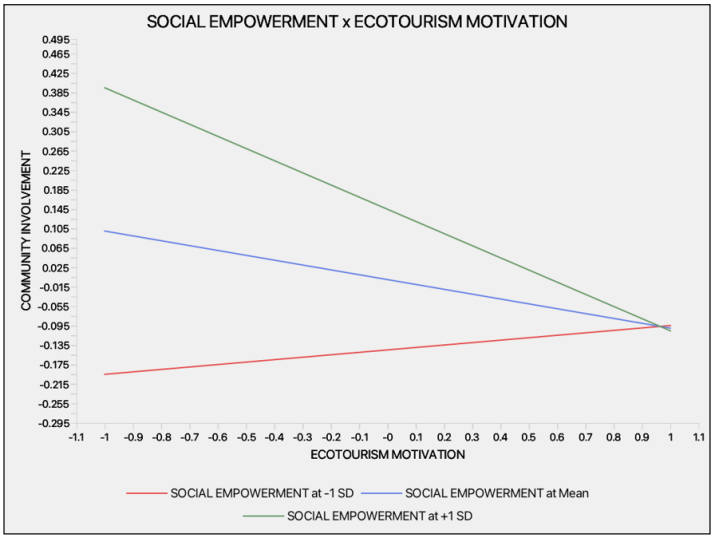

Figure 2. Simple slope plot for the moderating effect of social empowerment on the ecotourism motivation-community involvement relationship
Source: Authors' own work

between ecotourism motivation and community involvement in tourism planning is close to flat and marginally positive. At the mean level of social empowerment, the relationship mirrors the overall negative main effect reported for H_2. However, when social empowerment is high, the same relationship becomes markedly negative, indicating that the negative effect of ecotourism motivation on formal community involvement is amplified precisely among residents with the strongest sense of social empowerment. It is worth noting that, consistent with SmartPLS's two-stage moderation procedure, the model also estimates a direct effect of social empowerment on community involvement in tourism planning independent of ecotourism motivation. This direct effect is positive and is responsible for the three simple-slope lines converging near the upper end of the ecotourism motivation range rather than at its mean, as would be the case if no such direct effect were present.

DISCUSSION

This study has explored and verified the influence of natural attraction on ecotourism motivation. To a certain degree, this study's findings are in line with the work of Alananzeh et al. (2022), who found that destination attributes significantly affect community motivation to participate in tourism events. Although their study focused on event tourism, the shared emphasis on destination qualities as a motivational factor supports the notion that environmental and surrounding characteristics can shape tourism-related behavioural intentions across contexts. Besides, this finding also solidifies the confirmed dynamics, as reported by

Ali et al. (2020), between the natural attraction and ecotourism motivation in an ecotourism and wetland-based research setting. On the other hand, this study also confirmed the nexus between ecotourism motivation and community involvement in tourism planning, which is differently influenced by the moderating role of distinctive dimensions of political, psychological, and social empowerment. It is crucial to note that political and psychological empowerment do not significantly moderate the relationship between ecotourism motivation and community involvement in tourism planning. However, social empowerment has been found to moderate the relationship significantly but negatively. Likewise, a significant negative relationship has also been found between ecotourism motivation and community involvement in tourism planning.

This unexpected dynamic reflects the complexity of ecotourism motivation, which does not necessarily translate into increased involvement among the community in tourism planning. Perhaps this can be ascribed to the bureaucratic facets of tourism planning, which may lead to frustration or disengagement, especially among the motivated community that expects immediate economic benefit. Moreover, this may indicate a perceived lack of influence among motivated community members in the decision-making processes. This perception could help explain why some community members prioritise personal business opportunities, such as running homestays or ecotours, over collective participation in planning efforts. Such a situation may contribute to the worsening effect of social empowerment on the reduced need for formal involvement in tourism planning. It is posited that a stronger social cohesion or sense of agency within the community may lead them to perceive formal tourism planning as unnecessary, thus explaining their lower participation (see Azinuddin et al., 2020; Azwar et al., 2023). This situation might discourage broader participation, creating a social division that makes communities more aware of tourism governance inequalities and withdraw from collective and formal planning.

As for the findings on the non-significant moderating role of political and psychological empowerment, they align with the mixed results found in existing studies, which indicate that distinctive dimensions of empowerment can have discernible effects on support-based dependent constructs. While the existing studies do not operationalise empowerment as a moderator, it helps the current study to situate the findings within the broader context of tourism research. For instance, dos Santos et al. (2024) reported that psychological empowerment significantly influences support for sustainable tourism development. In contrast, Yeager et al. (2020) reported that both psychological and social empowerment significantly affect support for short-term vacation rentals. This differs from the findings of Aleshinloye et al. (2021), who found that only psychological empowerment does not significantly impact involvement in tourism planning. These

varying outcomes may be attributed to the distinct contexts of each study, which can lead to different significant effects of empowerment within a specific destination (Scheyvens & Watt, 2021).

Accordingly, the current study's findings perhaps illustrate a lack of real political influence, which can be attributed to the dominance of external stakeholders in the tourism sector. This dominance is posited to render the role of political and psychological empowerment ineffective since it demonstrates the highly institutional planning process, subsequently reducing one's self-efficacy or confidence to influence. Despite the negative dynamics, this study also confirms the positive and significant influence of community involvement in tourism planning on their support for sustainable tourism development. The findings resonate with the findings of past studies as numerous scholars assert that when local communities are active and committed to tourism planning, decision-making, and operations, they will have growing possibilities to support tourism initiatives (Gannon et al., 2021; Kim et al., 2021).

CONCLUSION

Theoretical Contributions

This study is considered novel, given the scarcity of studies employing the EMT in tourism and wetland-based destinations. The integration of the empowerment theory into the conceptual model of this study further narrows the theoretical gap identified in terms of its pertinence in the realm of the nature-based destination and its dynamics within the interrelationship between the study constructs. Accordingly, the study explores how natural attraction, especially derived from the context of wetland-based destinations, can shape the community's ecotourism motivation, which ultimately leads to their involvement in tourism planning. However, the negative influence of ecotourism motivation on community involvement in tourism planning highlights the complex dynamics of cognitive and behavioural scholarships in the community-based tourism development literature. This reflects the importance of findings and offers a valuable and novel contribution to the tourism body of knowledge. Next, our study adds to the body of knowledge regarding the EMT and empowerment theory by demonstrating how various community empowerment dimensions might have distinct moderating effects on the nexus between ecotourism motivation and community involvement in tourism planning.

However, the study findings contrast with the central tenet of EMT, which establishes that the community will engage in sustainable practices with increased environmental awareness and economic opportunities (see Ali et al., 2020). The empirical evidence generated from this study reflects the double-edged sword nature of ecotourism motivation and social empowerment, particularly highlighting complexities that challenge the EMT's assumptions. Therefore, the paradox

of ecotourism motivation and social empowerment presents a new perspective not fully accounted for in EMT as it contradicts the theory's assumption that modernisation processes naturally foster their involvement in inclusivity (Ali et al., 2020). On the other hand, the negative influence of social empowerment on the dynamics between ecotourism motivation and community involvement in tourism planning contrasts with the conventional empowerment theory. Based upon the premise that greater empowerment leads to higher participation, this study expands the utilisation of the empowerment theory in tourism, as it can be posited that strong social networks and cohesion within the community may lead to their disengagement in formal tourism governance (see Azinuddin et al., 2023; dos Santos et al., 2024).

In fact, the absence of significant moderating impacts of political and psychological empowerment in this study highlights the different theoretical facets and depths that can possibly further enhance the universality of empowerment effects in tourism participation. This is a valuable contribution to the empowerment theory, as past studies supported the ambivalent empirical evidence that highlights the complexity of the dynamics between empowerment and participation of the community (Gutierrez, 2023). As discussed previously, the highly institutionalised tourism planning contexts may lead to structural barriers that do not necessarily lead to actual influence on community participation. The nature of the results is inferred to add to the expansion of the empowerment theory, where the study highlights the need to integrate the limitations of community with strong social agency in structured planning environments.

IMPLICATION OF THE STUDY

The nature of the findings reflects the non-linear dynamics generated from the interrelationship between the study constructs. For instance, the negative relationship between ecotourism motivation and community involvement in tourism planning heightens the need for policymakers to restructure tourism planning procedures to ensure they are more inclusive, transparent and responsive to community needs. Perhaps a local tourism advisory committee need to be empowered to further enhance the community-driven decision-making processes and subsequently capitalise on the existing social networks to integrate informal decision-making structures with formal tourism planning.

With the negative moderation effect of social empowerment on the link between ecotourism motivation and community involvement in tourism planning, traditional leadership structures should be recognised and maintained. Tourism policies, therefore, should incorporate community forums and cooperative-based decision-making, which can be employed in parallel with government planning agencies to ensure that socially empowered groups can contribute meaningfully to sustainable ecotourism development. On the other hand, short-term economic incentives such as small grants,

revenue-sharing agreements or microfinance options are a few strategic directions that can be undertaken considering the findings that may suggest the expectation of immediate economic benefits among the motivated community members.

Furthermore, the negative influence of ecotourism motivation on community involvement can also be attributed to the scarcity of understanding or awareness of how to engage in formal tourism planning. In this sense, capacity-building programs that encompass crucial elements, namely strategic planning, tourism product development, financial literacy, and conservation management, should be emphasised. This can be done in collaboration with universities and non-governmental organisations related to tourism. Implementing such programs also needs to prioritise community-driven sustainability initiatives to cultivate long-term support from the locals. For example, designating locals as stewards of nature-based destinations in the shape of eco-rangers, nature guides, or biodiversity monitors can ensure that they remain part of the main fabric of the sustainable tourism governance model.

More specifically, given the negative effect of ecotourism motivation and the negative moderating role of social empowerment on formal planning involvement, destination managers such as the Terengganu State Parks Management Council and the local district office could adopt a two-track governance formula. First, a "fast-track" consultation channel (e.g., a rotating village-level liaison seat on the Setiu Wetland tourism advisory committee, with a fixed maximum response time for community proposals) to directly counter bureaucratic fatigue, and second, formal recognition of existing informal structures, such as village heads, fishermen's associations, and cooperative groups, as official consultative bodies within the planning process, rather than requiring residents to route their input solely through conventional public hearings. Anchoring formal planning cycles to the community's existing informal social networks, instead of running them in parallel, is intended to reduce the incentive for socially empowered residents to bypass formal channels altogether.

LIMITATION AND RECOMMENDATION FOR FUTURE RESEARCH

This study, like others, has certain limitations that need to be acknowledged when planning future research in this field. The research employed non-probability sampling, which means that the data analysed cannot be applied beyond the tourists involved in this study. As a result, the findings should be interpreted with caution. However, a reliable data model can still instil confidence in the results and interpretations (Field, 2009). Future investigations can further examine and confirm the significant relationships among natural attraction, ecotourism motivation, community empowerment, involvement in tourism planning, and support for tourism development in

various contexts. Future research is also recommended to incorporate different stages of tourism destination development through a longitudinal approach. This would allow for a comprehensive assessment of the dynamics from the early stages of destination development to the maturity phase, where growth begins to plateau.

Additionally, factors such as place attachment, tourism impacts, emotional solidarity, or quality of life could provide deeper insights into the associations between natural attractions, ecotourism motivation, community empowerment, engagement in tourism planning, and support for sustainable tourism development. Building specifically on the current study's counterintuitive findings, future research is encouraged to re-examine the boundary conditions of the motivation-involvement and empowerment-involvement relationships by testing additional mediating or moderating variables such as institutional trust, perceived bureaucratic complexity, and the strength of informal governance networks, which may help explain why political and psychological empowerment were non-significant and why social empowerment ultimately reduced formal planning involvement in this study. These recommendations are made based on the conceptual framework of the suggested constructs, which align with general destination planning and development, as well as community-based behavioural elements. Adopting these approaches can lead to improved policy formulation and implementation by the wider spectrum of relevant actors in the context of ecotourism and nature-based destinations.

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Stakeholder Dynamics and Local Wisdom in Sustainable Community-Based Tourism Development: Evidence from Agam Regency, Indonesia

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ABSTRACT

This study examines how tourism stakeholders and local wisdom interact in sustainable Community-based Tourism (CBT) development in Agam Regency, West Sumatra, Indonesia, a destination governed simultaneously by formal district administration and Minangkabau customary (*adat*) institutions. Data were generated through five single-constituency focus group discussions involving 19 informants representing the five Penta-Helix constituencies of government, academia, tourism business, community, and media, and were analysed thematically using NVivo. Stakeholders expressed broad optimism about post-pandemic recovery and CBT's growth potential. However, two persistent frictions emerged: (i) the exclusion of customary leaders (Niniak Mamak) from early-stage planning, generating role uncertainty and resistance over communal land; and (ii) overlapping mandates and contested expertise among Penta-Helix actors that left communities without coherent guidance. Local wisdom was rhetorically endorsed by all stakeholder groups yet structurally marginalised within formal planning instruments. The study contributes to stakeholder theory by showing that stakeholder salience in culturally embedded destinations

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is conferred as much by customary legitimacy as by formal institutional position. It extends the theory by demonstrating that salience is field-specific rather than actor-specific: where statutory and customary authority systems assess power, legitimacy, and urgency independently, an actor may be definitive in one field and latent in the other, and the resulting divergence, rather than any deficit of participation, is the generative source of governance conflict.

Keywords: Community-based tourism, local wisdom, Penta-Helix, tourism stakeholder, sustainable tourism

INTRODUCTION

Community-based tourism (CBT) is a development approach in which local communities hold a central role in the planning, decision-making, management, and benefit-sharing of tourism activities within their locality (Giampiccoli & Mtapuri, 2012; Okazaki, 2008). Unlike conventional, typically externally driven models, CBT is grounded in community ownership, empowerment, and local knowledge and cultural values as guiding principles for development (Dangi & Petrick, 2021). CBT is therefore best understood not as a tourism product but as a community-centred development approach that balances economic returns with socio-cultural integrity and environmental sustainability.

CBT has long been advanced as an instrument for sustainable development in economically disadvantaged regions, with documented contributions across the socio-cultural, environmental, and economic dimensions of community life (Dangi & Petrick, 2021; Murphy, 1985; Okazaki, 2008). Contemporary sustainable tourism discourse reflects a broader shift towards participatory approaches, premised on the recognition that tourism should actively involve and benefit host populations rather than merely draw on their natural and cultural resources. Within this movement, CBT has become a key pathway to align tourism with broader sustainable development objectives, particularly poverty alleviation, environmental conservation, and cultural heritage preservation (Butler, 1999; Lee & Jan, 2019).

Empirical work consistently identifies meaningful community participation as a determinant of CBT success. Tourism outcomes are more effective, equitable, and durable when residents are engaged not only as service providers but as co-planners and decision-makers (Dolezal & Novelli, 2022; Jaafar et al., 2020; Lee & Joo, 2024; Nguyen et al., 2022; Nugroho & Numata, 2022). This participation has been associated with stronger ownership, pride, and responsibility among residents, reinforcing cultural preservation and social cohesion (Lindström, 2020; Nugroho & Numata, 2021; Salleh et al., 2016). Further studies indicate that community engagement supports economic diversification and retention of local benefits (Dodds et al., 2018; Lee & Jan, 2019). Collectively, this literature establishes participation as central to CBT and to sustainable tourism more broadly.

Despite this accumulated evidence, several dimensions remain insufficiently examined. First, existing studies tend to foreground participation outcomes while devoting limited analytical attention to the stakeholder conflicts, power asymmetries, and negotiation processes that arise among communities, government agencies, and tourism intermediaries during implementation (Blackstock, 2005; Dolezal & Novelli, 2022; Giampiccoli & Saayman, 2018; Tosun, 2000). Second, researchers have more often acknowledged the role of traditional authorities and customary institutions in shaping tourism decision-making and resource control in passing than treated them as objects of analysis (Nguyen et al., 2022). Third, although local wisdom is routinely invoked as a normative principle of CBT, few studies examine empirically how it is operationalised, contested, or integrated within multi-stakeholder governance arrangements (Priatmoko et al., 2021; Yanes et al., 2019).

Agam Regency, West Sumatra, offers a theoretically productive setting for addressing these gaps. The regency combines rich Minangkabau cultural heritage, strong customary (*adat*) institutions, and diverse natural landscapes of highlands, lakes, and conservation areas (Chaeroni et al., 2023; Nasution et al., 2023), and has been increasingly positioned as a destination for nature-based and community-oriented tourism (Azwar et al., 2025; Haris et al., 2023). Whereas prior Indonesian research has focused on established tourism villages and national park peripheries (Nugroho & Numata, 2022) or on island community readiness (Sayuti, 2023), regencies where entrenched customary institutions coexist with rapidly intensifying tourism pressure have attracted comparatively little attention. In Agam, land is predominantly held communally under clan (*suku*) tenure and mediated by customary leaders, so that tourism development decisions traverse two authority systems simultaneously. This configuration makes stakeholder dynamics, traditional authority, and local wisdom analytically inseparable.

Accordingly, this study pursues three objectives: (i) to examine how key tourism stakeholders perceive CBT development in Agam Regency; (ii) to identify the roles stakeholders perform and the conflicts that arise between them in CBT planning and implementation and; (iii) to analyse the extent to which local community wisdom is integrated into CBT governance, and the mechanisms through which it is either enabled or marginalised. The current study is significant in generating a situated account of how communities can be engaged more effectively in tourism development, and in supplying evidence for policymakers and practitioners designing inclusive, culturally grounded tourism policy. Its originality lies in treating the intersection of local wisdom and stakeholder dynamics as an empirical problem rather than a normative assumption. The study specifies the conditions under which stakeholder salience diverges across coexisting authority systems, identifies legitimacy as the attribute most susceptible to such divergence, and states the scope

conditions under which the argument should hold in other settings of legal and customary pluralism.

LITERATURE REVIEW

Community-Based Tourism and Sustainable Development

The tourism literature discusses CBT as a development-oriented approach that places local communities at the centre of tourism planning, management, and benefit distribution. Unlike externally driven models, it rests on principles of local participation, empowerment, and sustainability, seeking to balance economic development with socio-cultural preservation and environmental conservation (Dangi & Petrick, 2021; Okazaki, 2008). Within the wider sustainable tourism discourse, CBT is increasingly framed as a mechanism for inclusive growth, poverty alleviation, and long-term destination resilience, particularly in rural and economically marginalised regions (Lee & Jan, 2019; Scheyvens & Momsen, 2008).

Empirical studies indicate that CBT can enhance community well-being where tourism development aligns with local values, capabilities, and aspirations. Sustainability outcomes are more likely where initiatives are embedded within existing community structures and supported by participatory governance arrangements (Moayerian et al., 2022; Zielinski et al., 2021). The literature nonetheless cautions against treating CBT as inherently sustainable. Outcomes depend on governance quality, stakeholder coordination, and the design of benefit-sharing mechanisms, and CBT initiatives often underperform when these conditions are absent (Dodds et al., 2018; Zielinski et al., 2020). Mayaka et al. (2019) further observe that CBT is applied to a wide range of organisational forms with markedly different degrees of community control, such that the label alone reveals little about the distribution of authority in any given case.

Evidence from outside Southeast Asia complicates any general verdict on CBT. It repays direct comparison, since the leading cases diverge not in their conclusions about performance but in their diagnoses of cause. In Kenya, Manyara and Jones (2007) find that community-based enterprises frequently reproduce dependency and elite capture rather than alleviating poverty. In Botswana, Stone and Stone (2011) report participation faltering less from elite capture than from limited community comprehension of the enterprise model itself. In Ecuador, Ruiz-Ballesteros (2011) argues pre-existing collective institutions absorbed tourism successfully, attributing the outcome to institutional endowment rather than to programme design. In Costa Rica, Trejos and Chiang (2009) locate weak local benefit retention in the structure of value-chain linkages rather than in governance arrangements. Salazar (2012) argues that this divergence stems from the label itself, which travels between contexts more readily than the institutional conditions that make community control substantive. This study positions itself within this debate on the side of institutional endowment, while

specifying a condition, the coexistence of customary and statutory authority over land, that the cases cited above do not address directly.

Stakeholder Theory as a Foundation for CBT Analysis

Stakeholder theory provides a productive lens for examining CBT because it conceptualises development as a process shaped by the interactions, interests, and relative power of multiple actors (Freeman, 1984). In tourism, stakeholders typically include residents, traditional authorities, government agencies, private operators, non-governmental organisations, and visitors (Byrd, 2007). From this perspective, sustainability depends not on participation levels alone but on how stakeholders negotiate and manage competing interests throughout the development process (Dolezal & Novelli, 2022; Jamal & Getz, 1995; Rocca & Zielinski, 2022).

Stakeholder theory is not the only available lens, and its selection here is deliberate rather than conventional. Institutional theory would focus on the regulative, normative, and cultural-cognitive pillars that sustain customary and statutory orders in parallel (Scott, 2014). Still, it accounts for institutional persistence more effectively than it explains which actor prevails in a specific development decision. Collaborative governance frameworks specify the conditions under which cross-sector deliberation yields agreement, including face-to-face dialogue, trust-building, and shared understanding (Ansell & Gash, 2008); however, these frameworks presuppose that the relevant parties have already been convened, which is precisely the matter at issue in *Agam Regency*.

Social Exchange Theory (SET) has been applied extensively to explain resident support for tourism as a function of perceived costs and benefits (Ap, 1992). Still, it operates at the level of individual attitude formation and offers limited purchase on inter-institutional contests over decision-making authority. Stakeholder theory is preferred because the empirical puzzle concerns recognition rather than attitude, deliberation, or persistence: which actors are constituted as parties to a decision, on what basis, and at which stage. The power-legitimacy-urgency triad directly addresses this question while accommodating a possibility central to this study: legitimacy may be recognised within one authority system but withheld within another.

Early CBT studies tended to treat community participation as a normative ideal, presuming consensus and shared objectives among stakeholders. Critical scholarship has challenged that presumption. Tosun (2000, 2006) shows that structural barriers, including restricted access to decision-making arenas, political hierarchy, and elite capture, routinely constrain participation in developing country contexts. Blackstock (2005) critiques the romanticisation of CBT, noting that communities are internally differentiated and characterised by unequal power relations. Cole (2006) shows that information asymmetries are themselves a mechanism of disempowerment, since

communities excluded from knowledge about tourism development cannot participate meaningfully in decisions about it. Together, these contributions establish the value of stakeholder theory for CBT research, in enabling examination of conflict, negotiation, and asymmetry rather than assuming harmonious collaboration.

Local Wisdom and Community Participation in CBT

Recent CBT scholarship increasingly identifies local wisdom as a critical element mediating stakeholder relationships. Local wisdom encompasses indigenous knowledge, customary institutions, cultural norms, and informal governance practices that guide community behaviour and resource management (Mungmachon, 2012; Priatmoko et al., 2021). In tourism settings, it serves two functions. First, it shapes the distinctiveness and authenticity of the tourism experience; second, it regulates stakeholder behaviour as a governance mechanism.

Integrating local wisdom into tourism planning has been associated with enhanced community legitimacy, greater trust, and a strengthened sense of ownership over tourism initiatives (Nugroho & Numata, 2021; Yanes et al., 2019). By contrast, when externally imposed development agendas displace local knowledge systems, initiatives are more likely to encounter resistance, conflict, and cultural commodification (Giampiccoli & Saayman, 2018; Nguyen et al., 2022). Participation should accordingly be understood not merely as involvement in tourism activities but as participation in knowledge production and in decision-making itself.

Conflict, Collaboration, and Power in CBT

A dynamic interplay between collaboration and conflict characterises CBT development. For this study, stakeholder conflict is understood as manifest disagreement between two or more stakeholder groups over the distribution of authority, resources, or benefits in tourism development, expressed through contesting decisions, withholding consent, or non-participation. Collaborative governance arrangements marked by shared decision-making, transparent communication, and equitable benefit distribution are associated with stronger sustainability outcomes and higher community support (Jamal & Getz, 1995; Lee & Joo, 2024; Mtapuri et al., 2022). Yet conflict arises frequently from competing interests, unequal power, and divergent perceptions of tourism's costs and benefits (Giampiccoli & Saayman, 2018; Rocca & Zielinski, 2022).

Such conflict commonly concerns land use, cultural representation, revenue allocation, or the boundary of authority between formal institutions and traditional leaders. Rather than construing conflict as a failure of CBT, recent work treats it as an intrinsic feature of multi-stakeholder tourism systems, to be managed through inclusive governance mechanisms (Dolezal & Novelli, 2022). Read through stakeholder theory; sustainability emerges where

conflicts are acknowledged and negotiated, not where they are suppressed by top-down planning.

European evidence indicates these tensions are not confined to developing-country settings, which limits the tendency to explain CBT conflict by reference to weak state capacity. Lindström (2020) documents a community-based sharing initiative destabilised by unresolved ambiguity over public-sector responsibility rather than by resource scarcity or administrative weakness. Across otherwise dissimilar contexts, the recurring pattern is the absence of an agreed rule governing who decides. This supports treating the allocation of authority, rather than the intensity of participation, as the analytically prior question, and it is the question this study pursues.

The Penta-Helix Model and Stakeholder Theory in CBT Governance

In Indonesia, the Penta-Helix model frequently guides CBT development, prescribing collaboration among government, industry, academia, communities, and media (Kagungan et al., 2021; Nainggolan et al., 2020; Sudiana et al., 2020). The framework has proven useful for identifying the actors that a tourism development programme must convene and has been widely adopted in Indonesian tourism village policy (Putra, 2019; Sumarto et al., 2020).

Its analytical reach, however, is limited. The model is descriptive and structural: it specifies the presence of stakeholders rather than the quality or asymmetry of their interactions, and it does not account for why some actors exert disproportionate influence over outcomes. Stakeholder theory addresses this by focusing on power relations, interest alignment, legitimacy, and conflict management (Freeman, 1984; Mitchell et al., 1997). Where the Penta-Helix model explains who is involved in CBT development, stakeholder theory explains how and why certain actors prevail. Integrating the two enables a fuller account of CBT governance, particularly in contexts where customary authorities and local wisdom operate alongside formal institutional arrangements.

Customary Institutions and Communal Land in Minangkabau Tourism Governance

Interpreting stakeholder dynamics in *Agam* requires attention to the customary institutional order of Minangkabau society. Village governance in West Sumatra is organised through the *nagari*, the customary-territorial unit that also functions as the lowest tier of formal administration following Indonesia's regional autonomy reforms. Within each *nagari*, authority is distributed among lineage-based clans (*suku*), whose affairs are led by *Niniak Mamak*, a traditional customary leadership institution in the Minangkabau culture composed of senior clan or lineage leaders known as penghulu. Kerapatan Adat Nagari is the village-level customary council of Minangkabau male clan elders (*Penghulu*), governing customary law, local

disputes, and traditional titles. On the other hand, Bundo Kanduang represents senior matriarchs in Minangkabau's matrilineal system, acting as custodians of ancestral property, cultural values, and internal household governance.

Land is central to this arrangement. A substantial proportion of the region's land is held not as individual freehold but as communal clan property, transferred only with the consent of customary leaders acting for the lineage rather than in a personal capacity (Ullah et al., 2017). Consequently, any tourism development requiring land, whether for road access, visitor facilities, or attraction sites, must secure customary consent in addition to statutory permission. Customary leaders thus function as both gatekeepers of a critical development resource and legitimising authorities whose endorsement shapes community willingness to participate. Earlier work on tourism in Minangkabau villages likewise indicates that cultural performance and community mobilisation for tourism operate through, rather than around, these customary structures (Hidayat & Arkhi, 2015). This configuration produces a distinctive stakeholder problem. *Niniak Mamak* possesses high legitimacy and considerable power within the customary system yet may have low salience in statutory planning processes that do not formally recognise them as stakeholders. The literature on CBT governance has not systematically examined this mismatch, and this study addresses the gap.

An Integrative Framework: Local Wisdom, Salience, and Governance Outcomes

Researchers have conventionally treated the three strands above separately, examining local wisdom as a cultural asset, conflict as an implementation problem, and governance as a question of institutional design. This study treats them as elements of a single system. Local wisdom is understood here not only as cultural content but as the medium through which customary legitimacy is constituted, transmitted, and made recognisable; customary legitimacy in turn conditions whether customary actors register as salient stakeholders within a given planning forum; salience conditions the stage at which those actors are engaged; and the stage of engagement determines whether customary authority operates as a planning resource or as a post hoc veto. Conflict, on this account, is not an input to the system but an output under a specifiable condition namely as a mismatch between the distribution of effective authority and the distribution of formal recognition. Sustainability outcomes follow from how that mismatch is managed rather than from whether participation occurs.

METHODS

Research Design

This study adopts a qualitative research design to examine the dynamics of CBT through multi-stakeholder interaction in Agam Regency, West Sumatra, Indonesia. A qualitative approach is appropriate given the aim of understanding how and why

stakeholders engage, negotiate, and contest within CBT governance, and it permits in-depth exploration of meanings, perceptions, and contextual realities not accessible through quantitative measurement (Marshall & Rossman, 2014; Merriam & Tisdell, 2015; Patton, 2015). The design is exploratory and theoretically anchored in stakeholder theory, which directs analytical attention to the roles, interests, legitimacy, and relative power of diverse actors in tourism development.

Sampling Strategy and Informant Selection

Purposive sampling was employed to identify informants with direct experience of, and involvement in, decision-making regarding CBT development in Agam Regency (Patton, 2015). This ensured that participants held relevant knowledge of tourism planning, community engagement, and governance processes. The study selected informants to reflect the five Penta-Helix constituencies: government, academia, tourism business, local community, and media.

Nineteen informants participated. This number was considered appropriate for three reasons. First, the study sought theoretical coverage rather than statistical representation, requiring sufficient depth within each stakeholder group to capture divergent perspectives and interaction dynamics. Second, prior qualitative tourism research indicates that samples in this range are adequate for examining complex stakeholder systems where informants are information-rich and analytically relevant (Merriam & Tisdell, 2015; Patton, 2015). Because the study sampled by constituency rather than by individual, the researchers evaluated saturation within and across stakeholder groups, and recruitment stopped when they judged that the range of positions within each constituency was adequately represented. Table 1 presents the informants' characteristics.

All sessions were audio-recorded with participants' consent to ensure accurate data capture. Ethical approval was obtained before data collection, and all participants provided informed consent.

Data Collection

Data were generated through five focus group discussions (FGDs). Each session lasted approximately one hour and was convened as a single-constituency group, such that the five sessions corresponded to the five Penta-Helix elements: government (five participants), academia (three), tourism business (three), local community (three), and media (five), as detailed in Table 1. FGDs were selected for their effectiveness in eliciting collective perspectives and in surfacing areas of agreement, contestation, and negotiation within group settings (Barbour, 2013; Vaughn et al., 1996).

The study adopted single-constituency grouping to reduce risk of conflict and allow each constituency to articulate its position without immediate institutional challenge. The design elicits within-group consensus and divergence but does not allow direct observation of cross-stakeholder negotiation,

so the inter-constituency contrasts reported are analytic reconstructions produced by comparing transcripts rather than exchanges observed in situ.

FGDs were conducted in Indonesian language, with participants free to use Minangkabau where preferred. The discussion guide was developed from the study objectives and from the literature on CBT, stakeholder dynamics, and local wisdom, and was organised around four domains: perceptions of tourism development in Agam; stakeholder roles and responsibilities; sources of tension and disagreement between stakeholders; and the place of customary institutions and local wisdom in tourism planning. Two academic experts in tourism governance reviewed the guide, and the team pilot-tested it before the main fieldwork. To protect confidentiality, informants are identified by code, and any details that could identify individuals have been omitted.

Table 1
Informant characteristics

No.	Informant Code	Age	Penta-Helix Element	Gender	Length of Involvement	Occupation
1	SA	40-49	Government	Male	>8 years	Civil servant
2	ES	50-59	Government	Female	>8 years	Civil servant
3	JI	50-59	Government	Male	>8 years	Civil servant
4	SB	40-49	Government	Male	>8 years	Civil servant
5	YE	50-59	Government	Female	>8 years	Civil servant
6	FF	30-39	Academia	Male	7-8 years	Lecturer
7	TR	30-39	Academia	Female	7-8 years	Lecturer
8	YEP	30-39	Academia	Female	5-6 years	Lecturer
9	EN	50-59	Business	Male	>8 years	Tour leader
10	HRJ	30-39	Business	Female	>8 years	Travel business owner
11	MSB	40-49	Business	Male	>8 years	Tour guide
12	HJ	50-59	Community	Male	3-4 years	Entrepreneur
13	AS	40-49	Community	Female	3-4 years	Instructor
14	SU	30-39	Community	Male	3-4 years	Entrepreneur
15	HA	40-49	Media	Male	>8 years	Journalist
16	M	50-59	Media	Male	>8 years	Journalist
17	PS	30-39	Media	Male	5-6 years	Journalist
18	RY	30-39	Media	Male	>8 years	Journalist
19	YU	30-39	Media	Male	>8 years	Journalist

Source: Author's work

Data Analysis

Audio recordings were transcribed verbatim, including relevant pauses and emphases, and verified against the recordings for accuracy. Transcripts were translated into English with systematic cross-checking to preserve meaning, and a second bilingual researcher reviewed all translated excerpts used in this article (Loubere, 2017). Thematic analysis was conducted using NVivo, following established procedures (Bandur, 2016; Braun & Clarke, 2006; Nowell et al., 2017), and proceeded through familiarisation, initial coding, theme development, theme refinement, and interpretation.

Coding proceeded in two cycles. In the first cycle, researchers independently coded the same transcript line by line, generating descriptive codes close to participants' own formulations, and then compared code lists to construct a shared codebook recording each code's label, definition, inclusion and exclusion criteria, and an anchor extract. The remaining transcripts were then coded against this codebook, which was revised iteratively as codes were added, merged, or partitioned; all revisions were logged with the date and the rationale for the change. Coding was neither purely inductive nor purely deductive. During coding, a small number of sensitising categories derived from stakeholder theory, namely power, legitimacy, urgency, and stage of engagement, were kept in view, while codes concerning local wisdom, oral transmission, role uncertainty, and training were generated inductively from the data.

In the second cycle, codes were clustered into candidate categories, and categories were then examined for internal homogeneity and external distinctiveness. Candidate themes were tested against the full data set to confirm that each was supported across more than one session and that no substantial disconfirming extract had been set aside; the account of autonomous *Pokdarwis* planning was retained on this basis as a disconfirming case rather than treated as an anomaly. Coders resolved discrepancies through discussion until they reached agreement. Rather than reporting an inter-coder reliability coefficient, which presumes a fixed coding frame, consensus coding was adopted as the more appropriate procedure for an interpretive design (Nowell et al., 2017). The study retained four final themes, as summarised in Table 2.

Trustworthiness

The study adhered to established qualitative criteria of credibility, dependability, transferability, and confirmability (Merriam & Tisdell, 2015; Smith & Sparkes, 2016). Credibility was strengthened by comparing accounts across the five stakeholder groups and iteratively engaging with the data. Interpretations were clarified with selected participants to confirm accuracy of meaning. The researchers supported dependability by documenting the research process and analytic decisions, and transferability by providing rich contextual descriptions of the setting and participants. Two researchers conducted coding and resolved discrepancies through discussion.

Table 2
Thematic structure and contributing stakeholder groups

	Theme	Sub-Theme	Contributing Constituencies
1.	Stakeholder perceptions of CBT development	Historical and contemporary recognition of Agam tourism	Academia, business
		Post-pandemic revitalisation	Government, business
		Progress alongside persistent obstacles	Business
		Perceived marginalisation of the community	Community
2.	Stakeholder roles in CBT development	Policy, facilities, training, budget	Government
		Capacity building and product identification	Academia
		Facilities and financial support	Business
		Mobilisation and awareness	Community
3.	Governance frictions in CBT development	Contested authority over land and the sequencing of customary consent	Business, media, community
		Fragmented coordination and contested expertise	Government, academia, community
4.	Integration of local community wisdom	Customary norms and oral transmission	Community
		Community-led management through *Pokdarwis*	Government
		Cross-stakeholder collaboration for awareness	Government
		Economic benefit and revenue sharing	Business

Source: Author's synthesis

Collectively, these measures strengthen the trustworthiness of the findings.

Analytic memos were used throughout to record the researchers' own assumptions about the legitimacy of customary and statutory claims, and coding decisions on which the two positions diverged were resolved through discussion rather than by deferring to either. The researchers' academic standing may also have shaped participants' accounts, particularly in the government and academia sessions, where responses sometimes took the form of institutional position statements; the researchers coded such extracts as claims to legitimacy rather than neutral descriptions of practice.

RESULTS AND ANALYSIS

Thematic analysis produced four principal themes, each comprising several sub-themes. Table 2 summarises the thematic structure and indicates which stakeholder constituencies contributed to each.

Stakeholder Perceptions of CBT Development

Informants across all five constituencies characterised Agam as a destination with established standing and renewed momentum, but differed markedly in how equitably they thought that momentum was being managed.

Historical and Contemporary Recognition of Agam Tourism

Academic and business informants located current development within a longer trajectory of national and international recognition, invoking that history as evidence of latent capacity rather than as nostalgia:

> … Agam tourism has been famous since the 80s and 90s. It was indeed a destination almost at par with Bali, in which, besides local, this region is also well recognised by the foreign tourists… We need to continue developing… (TR, Academia informant)

The comparison with Bali functions less as a factual claim than as a rhetorical assertion of entitlement to development attention. Here, historical standing is mobilised as a resource in present-day advocacy, establishing a baseline against which current performance is judged and found wanting.

Post-Pandemic Revitalisation

Government informants framed recovery as evidence of sectoral resilience and of administrative commitment:

> … everybody knew that the economy, tourism, and many other sectors almost collapsed during the COVID-19 pandemic. However, after COVID, Agam and other regencies in Indonesia are showing a bright light, with the tourism sector spurring again. Although most tourists are still local, tourism significantly influences the community's economy. Thus, we as government officers need to work hard to attract more local and international tourists to visit Agam regency … (SB, Government informant)

Notable in this account is the framing of recovery as a governmental achievement and an administrative obligation. The community appears as beneficiary rather than as agent, a positioning that recurs across government accounts and that community informants later contest directly.

Progress Alongside Persistent Obstacles

Business informants likewise reported recovery, citing external recognition as validation:

> … after the health pandemic, I saw that tourism in Agam is back to normal. Various products attracted more tourists to the region. This is not surprising that at the end of 2021, this district won the Anugerah Pesona Indonesia (API) award from the Ministry of Tourism, which is amazing. Tourism in this area will shine in the future … (HRJ, Business informant)

Product diversification is presented as the mechanism of recovery, consistent with the strategic emphasis on variety within Agam's CBT programme. However, this account's credibility sits in tension with the community assessments reported below, and this divergence between externally validated success and internally experienced

exclusion constitutes the study's central empirical finding. The Anugerah Pesona Indonesia is an annual public-voting award programme organised independently, not conferred directly by the Ministry of Tourism and Creative Economy. In the 2021 cycle, announced on 30 November 2021, Agam Regency placed second in the "most popular historical site" category for the Buya Hamka Birthplace Museum. The informant's characterisation is reproduced as given.

Perceived Marginalisation of the Community

Community informants accepted the developmental narrative while disputing their own place within it:

> … undoubtedly, Agam Regency's tourism development continuously improves, with domestic tourists steadily flowing. Despite this, the synergy between the Penta-Helix and the community is still lacking. This area's government planning and development did not involve the local community. Are we not important in development planning? … (HJ, Community informant)

The interrogative closing this account is significant. The informant does not dispute that development is occurring, nor that it brings benefit; the objection concerns standing. What is claimed is not a share of outcomes but recognition as a legitimate party to the decision. This distinction, between distributive and procedural inclusion, organises much of what follows.

Stakeholder Roles in CBT Development

Informants described a division of labour that is, in principle, complementary. Each constituency articulated a clear conception of its own contribution.

Government

Government informants defined their role in terms of cultural positioning, infrastructure, and capacity building, alongside planning, supervision, and budget allocation:

> Currently, our primary role is to expand CBT development based on our unique culture. We are also continuously improving tourist facilities and infrastructure to enhance the tourist experience. Optimising tourism training for the community as a main tourism actor in Agam is also our key role. (SA, Government informant)

> In general, our role is planning, managing, and supervising the development of CBT based on the regulations from the central government. We also focus on regional budgeting by optimising it for the tourism sector, which is our focus in Agam. Therefore, we urge all Penta-Helix to take proactive action jointly. (YE, Government informant)

Two features warrant attention. First, the community is positioned as recipient of training rather than as source of knowledge, an orientation directly relevant to the treatment of local wisdom. Second, the exhortation that other actors "take

proactive action" locates responsibility for collaboration outside the government's own mandate, an attribution that academic and community informants contest.

Academia

Academic informants described a capacity-building and product-identification function extending across a wide territory:

> Providing training and mentoring to the local communities on tourism is our effort for CBT development. We know that Agam communities are directly involved in tourism activities. Some are tourist attraction managers, tour guides, providers of accommodation, food, and beverages, and souvenir sellers for tourists. We must ensure the local communities we train can provide good service to the visitors. (YEP, Academia informant)

> Besides monitoring the existing ones, our job is to identify new CBT products that can be developed, whether natural, cultural, or artificial. We support and enhance the local community's knowledge and skills through training and knowledge-transfer mechanisms. We need to cover huge areas or villages in Agam Regency. (FF, Academia informant)

The reference to territorial coverage signals a resource constraint that becomes consequential later: academic capacity is spread thinly across many *Nagari*, limiting sustained engagement with anyone.

Business and Community

Business informants described material and financial support, while community leaders described mobilisation:

> As tourism businesses, we collaborate with local communities, providing support facilities such as homestays, culinary centres, and souvenirs. Any local communities that want to join the CBT … we provide financial assistance for them. (EN, Business informant)

> As a community leader, I undertake the operation of developing CBT in Agam Regency. My responsibility is to share knowledge, raise awareness, and invite local communities to participate in the CBT programme in their area. Through continuous effort, I can see Pokdarwis in Sungai Batang, Puncak Lawang, Simarasok, and other localities start to accelerate a few CBT activities. (SU, Community informant)

Read together, these accounts describe a functioning division of roles. Each constituency performs work the others do not, and each does so intelligibly. What they do not describe is any mechanism by which those roles are coordinated, and it is at precisely this junction that the conflicts reported below arise.

Stakeholder Conflicts in CBT Development

Informants identified conflicts not as discrete disputes but as recurrent expressions of two underlying governance problems. The first

concerns who holds authority over land and at what stage that authority is engaged; the second concerns how mandates and expertise are allocated among actors once development proceeds. The sub-themes are presented under these two headings rather than separately, since the accounts that follow are analytically continuous: each specifies a different point at which the same allocation problem becomes visible.

Contested Authority Over Land and the Sequencing of Customary Consent

Business informants identified customary consent over land as the most frequent site of dispute:

> … I often saw conflicts in Agam over land-use permits or land for tourism development by Niniak Mamak or traditional leaders. Because the suku own most of the land in the regency, Niniak Mamak consent is required before tourism development can proceed. Without their permission, CBT development would be challenging to implement … (MSB, Business informant)

This account establishes customary leaders as holders of an effective veto grounded in communal tenure. In stakeholder terms, Niniak Mamak possess both legitimacy and coercive power (Mitchell et al., 1997), yet the conflict arises not from the existence of that power but from its non-recognition in the sequence of planning.

The timing of engagement, rather than the substance of the claim, is what informants across constituencies identified as decisive. Media informants attributed conflict specifically to the timing of engagement:

> Yes, conflicts in tourism are real in Agam. Based on my observations, conflicts largely stem from traditional leaders. Lack of involvement in the initial planning stages inhibits the development of CBT in the area. Meaning that Niniak Mamak felt uncertain about their role in the implementation … (RY, Media informant)

The diagnosis is procedural rather than substantive. Customary leaders are not described as opposing tourism development in principle; they are described as uncertain of their standing within a process to which they were admitted late. Uncertainty of role, on this account, precedes and produces resistance.

Community informants extended the point to the *nagari* level, linking exclusion to uneven programme uptake:

> … I am optimistic that CBT can continue to develop in Agam. In 2022, the region issued a decree on rural tourism, recognising 21 villages (*Nagari*) as priority areas for rural tourism development. Unfortunately, not all *Nagari* are actively involved because the government did not include the customary authorities in planning the CBT programme. As we

> know, the customary authorities are great influencers on society, including policymaking in Agam … (HJ, Community informant)

Beneath the question of timing lies a further incompatibility concerning what statutory development requires of customary authority. Business informants located the conflict in the transfer of control that statutory development requires:

> … most of the time, conflicts arise due to the government policies regarding the construction of tourism facilities. The local government can construct tourism facilities if the land is granted to it. However, traditional leaders, or Niniak Mamak, disagree with this rule because they do not retain full power after the land is granted. Thus, they consider this policy detrimental … (MSB, Business informant)

This is the clearest articulation of the structural problem. The statutory instrument requires communal land to pass into state control as a precondition for investment; customary authority is constituted precisely by retaining that control on behalf of the lineage. The conflict is therefore not reducible to poor communication. It reflects an incompatibility between two systems of tenure, one of which the planning framework does not formally recognise. Through the stakeholder theory, three accounts in this sub-theme describe a single sequence: an actor holding power and customary legitimacy is assessed as non-salient by the statutory forum, is consequently engaged only at the point of land transfer, and at that point exercises the power that earlier recognition would have converted into a planning resource.

Fragmented Coordination and Contested Expertise

The second governance friction concerns how mandates and recognised expertise are allocated among actors already constituted as stakeholders. Informants located its cause differently, and the pattern of that disagreement is itself analytically informative. Government informants located the impediment in community capability:

> … from my experience, the hindrances generally stem from the human resources aspect. I realised that the communities' understanding and appreciation of tourism are still insufficient. Thus, not everyone prioritises preservation. Those are the fundamental aspects of developing CBT in Agam. As a government representative, I urge Pokdarwis to actively promote the local tourism awareness and value of tourism to the local communities … (JI, Government informant)

The divergence in attribution is itself analytically significant. Where community and media informants locate the problem in the design of the planning process, government informants locate it in a deficit of community understanding. Each diagnosis implies a different remedy, and neither constituency's account acknowledges the others.

Academic informants identified a coordination failure with direct consequences for communities:

> The conflicts in fostering local communities involved in tourism stem from a lack of synergy between Penta-Helix stakeholder. Training typically does not align with its respective functions and roles. As a result, the Penta-Helix's roles in assisting the community overlap. The community becomes confused about what kind of CBT development model needs to follow … (FF, Academia informant)

Confusion here is an outcome of institutional design rather than community capability, and it qualifies the deficit account offered above: communities receiving inconsistent guidance from multiple actors may appear unresponsive without lacking capacity.

The same fragmentation was reported within constituencies and between them, indicating that the problem is one of mandate allocation rather than inter-organisational rivalry.

> … I notice an internal conflict among local government officers over the development of CBT in Agam. Other agencies in this regency wash their hands of the task, leaving the Tourism Office to carry sole responsibility without support. That is the reason why we can't achieve our target … (JI, Government informant)

> … I want my people to be competent and have strong knowledge of CBT, with academics and tourism business experts as training moderators. However, the government often appoints people who are not well versed in tourism to give training to the local communities … (SU, Community informant)

The second account is notable in reversing the deficit framing: the shortfall in competence is attributed not to the community but to those appointed to instruct it. Taken with the academic account above, this suggests that the training pathway, the principal mechanism by which government intends to build community capacity, is itself a site of contestation over expertise and authority. In stakeholder terms, the two frictions are related: where the first concerns whether an actor is recognised as a party to the decision, the second concerns whether an actor recognised as a party is accorded the authority its mandate implies. Both are failures of recognition rather than willingness, which is why exhortations to collaborate, leave the underlying allocation untouched.

Integration of Local Community Wisdom

The final theme concerns how local wisdom enters, or fails to enter, tourism practice.

Customary Norms and Oral Transmission

Community informants described an unwritten normative order governing resource use and cultural transmission:

> In our community life, we always refer to the unwritten rules of the culture and resources. Despite this, we passed all the attributes orally to the next generation, which includes local tourism potential. (AS, Community informant)

Two properties of local wisdom are visible here: it is normative, regulating conduct in relation to resources, and it is orally transmitted, therefore absent from the documentary forms in which planning decisions are recorded. This second property is consequential. Knowledge that exists only in oral transmission is structurally disadvantaged in processes that operate through written instruments, which supplies a mechanism, rather than merely an outcome, for the marginalisation the study identifies.

Community-Led Management Through *Pokdarwis*

Government informants described substantive community initiative through *Pokdarwis* (*Kelompok Sadar Wisata*, tourism awareness groups):

> The local communities' eagerness to manage CBT in Agam has resulted from their participation in the Pokdarwis. They have taken the initiative to acquire plans to develop CBT in their respective villages, including land use, management, and income sharing. (SB, Government informant)

This account is important as a disconfirming case. It describes communities planning autonomously across precisely the domains, land use, management, and revenue distribution, over which conflict was reported elsewhere. Participation in Agam is therefore not uniformly absent; it appears at the village level through *Pokdarwis* but is absent at the regency level in formal planning. The finding is one of scale and forum rather than of participation per se.

Cross-Stakeholder Collaboration for Awareness

Government informants also described deliberate exposure activities:

> To me … the awareness of the communities on CBT in Agam Regency is achieved through collaboration between Penta-Helix and Pokdarwis. This is why we never stop inviting representatives of local communities to the areas where tourism is more advanced so that they can increase their sense of concern for tourism. (SA, Government informant)

The direction of learning here is instructive, where communities are taken to observe more advanced destinations, rather than external actors being brought to learn from local practice. Local wisdom is treated as an asset to preserve and display rather than as a source of planning knowledge.

Economic Benefit and Revenue Sharing

Business informants described operational arrangements distributing revenue to community participants:

> We have collaborated with the local communities to promote the region, culture, cuisine, and various tourist attractions. The local community actively helps us promote the tour packages, and in return, we pay a commission based on the number of guests who book through our channel. Both parties will get the benefits. (MSB, Business informant)

Economic integration is thus functioning at the transactional level. Communities are compensated participants in the tourism value chain. What the data do not show is any corresponding mechanism through which their knowledge enters the decisions that determine what is developed and where.

DISCUSSION

This study examined how tourism stakeholders and local wisdom interact in CBT development in a destination governed simultaneously by statutory administration and Minangkabau customary institutions. Consistent with accounts of post-pandemic recovery in Indonesian destinations, stakeholders expressed optimism about tourism's economic contribution. The findings add that such optimism coexists with, and partly conceals, an unresolved allocation of authority. Perceptions diverged systematically by constituency, where government and business informants emphasised growth, while community informants disputed not the development itself but their standing within it. That divergence is the first observable trace of the mismatch analysed in the following.

Conflict as Institutional Incompatibility

CBT scholarship commonly attributes stakeholder conflict to weak synergy or inadequate consultation (Cole, 2006; Mtapuri et al., 2022). The *Agam* evidence suggests these describe symptoms rather than causes. The statutory pathway for constructing facilities requires communal land to pass into state control, whereas customary authority is constituted by retaining that control on behalf of the lineage (Ullah et al., 2017). Consent is withheld not from opposition to tourism but from the terms on which it is proposed. No improvement in consultation resolves an incompatibility of this kind, since the two positions are coherent expressions of two tenure systems, only one of which the planning framework recognises.

This also explains the mutual non-recognition. Within the statutory field the community appears as a recipient of training, so incapacity is the intelligible diagnosis; within the customary field standing precedes competence, so exclusion is. Neither account is mistaken by the criteria of the system producing it, which is why each constituency's remedy appears unresponsive to the other. What is unevenly distributed is therefore not information about tourism, as Cole (2006) proposes, but recognition of who is entitled to act upon it.

The Documentary Filter and Forum-Specific Participation

The findings confirm the significance of local wisdom (Mungmachon, 2012; Priatmoko et al., 2021) while qualifying

its reported association with community legitimacy (Nugroho & Numata, 2021; Yanes et al., 2019). Local wisdom in *Agam* was rhetorically endorsed yet structurally marginalised, and this study identifies the mechanism: knowledge transmitted orally and encoded in unwritten norms is disadvantaged within planning conducted through documentary instruments. Marginalisation of this kind requires no intent; it follows from procedure operating upon knowledge for which it holds no format of receipt.

The case nonetheless resists a straightforward reading as participation failure. This study documents communities planning autonomously through *Pokdarwis* across land use, management, and revenue distribution, precisely the domains contested at regency level. Participation is thus forum-specific: substantive at the village scale, attenuated in regency planning. This redirects attention to the articulation between scales, an issue addressed less systematically than participation itself (Dodds et al., 2018; Zielinski et al., 2020) and implies that the practical problem is less building community capacity than constructing a channel through which existing capacity registers.

CONCLUSION

This study examined stakeholder and local wisdom dynamics in CBT development in Agam Regency, drawing on five single-constituency focus group discussions with 19 informants. Three findings stand out. Stakeholders converge in optimism about recovery but diverge over how inclusively development is managed. The principal source of conflict is the late engagement of customary leaders, reflecting institutional incompatibility between statutory land-grant requirements and communal tenure rather than communication failure. Local wisdom is widely endorsed yet structurally marginalised, partly because orally transmitted knowledge has no format to enter documentary planning; meanwhile, substantive planning capacity operates at the village level through *Pokdarwis*, indicating a problem of articulation between scales rather than a lack of capability. Theoretically, the study establishes that salience is field-specific under legal and customary pluralism, that legitimacy is the attribute least able to transfer between coexisting authority systems, and that the stage of engagement converts divergent salience into observable conflict. It further distinguishes elite exclusion from elite capture. Practically, it identifies the sequencing of consent, the design of land-transfer instruments, and the documentary translation of local knowledge as the decisive junctures.

IMPLICATION OF THE STUDY

Theoretical Implications

Mitchell et al. (1997) treat power, legitimacy, and urgency as attributes assessed within a single field. Under legal and customary pluralism, these attributes are assessed independently within two fields. *Niniak Mamak* are definitive stakeholders within the customary order and latent within the

statutory order, and neither assessment is erroneous by its own criteria. Notably, salience is field-specific rather than actor-specific, making the pairing of actor and forum the appropriate analytical unit. Second, legitimacy is the attribute most liable to diverge, since power is often observable in both fields, as the land veto demonstrates. In contrast, legitimacy is constituted by the rules of a particular order. Third, divergence is self-correcting only at implementation, which is why conflict presents late and appears as obstruction rather than as a predictable consequence of sequence. The greater the divergence in an actor's assessed legitimacy across coexisting authority systems, the later that actor is engaged, and the more likely it is to exercise its retained power as veto rather than endorsement. Figure 1 formalises these relationships.

The case also refines the elite-capture reading dominant in critical CBT scholarship (Manyara & Jones, 2007; Tosun, 2000). In *Agam,* the excluded actor is itself a local elite, and exclusion rather than dominance produces the governance failure. Elite capture and elite exclusion are distinct pathologies requiring opposite remedies, and the distinction collapses wherever "community" is treated as undifferentiated (Blackstock, 2005). Read internationally, the leading cases diverge in diagnosis rather than verdict: elite capture in Kenya (Manyara & Jones, 2007), capability deficit in Botswana (Stone & Stone, 2011), institutional endowment in Ecuador (Ruiz-Ballesteros, 2011), value-chain structure in Costa Rica (Trejos & Chiang, 2009), and unresolved public-sector responsibility in Scandinavia (Lindström, 2020). The recurrent element is the absence of an agreed rule specifying who decides, supporting the treatment of authority allocation as analytically prior to participation intensity.

Stakeholder theory was selected advisedly, while institutional theory accounts for the persistence of both orders) but not for which prevails in a given decision; collaborative governance presupposes the convening that is here at issue. The social exchange theory operates below the level of inter-institutional contests over authority. Accordingly, transferability rests on an institutional condition rather than a cultural setting: communal lineage tenure, a customary authority empowered to consent on the lineage's behalf, and a statutory framework that engages that authority at transfer but not at proposal. These co-occur beyond Southeast Asia, including in Andean community landholding and customary tenure across sub-Saharan Africa and the Pacific. The argument should weaken where land is individually titled, where customary authority is ceremonial rather than proprietary, or where planning frameworks already constitute customary bodies as consultative parties, a scope condition falsifiable against such cases.

Practical Implications

First, reposition customary endorsement from an implementation requirement to a planning input through a mandatory consultation protocol in the regency

planning cycle, under which no *nagari* proposal advances to budgeting without a documented record of consultation with the relevant *Kerapatan Adat Nagari*. This converts customary standing from informal courtesy into procedural entitlement. Second, a standing participatory tourism council at the regency level would provide the missing cross-scale channel, convening the Penta-Helix constituencies with *Kerapatan Adat Nagari* and *Pokdarwis* representatives. It should hold a mandate over proposal sequencing and training allocation rather than an advisory role and requires *Pokdarwis* plans to be tabled as formal inputs.

The statutory land-grant requirement warrants review, since predicating investment on transfer structurally excludes those *nagari* whose customary institutions are strongest. Long-term usufruct, revenue-sharing agreements, and community land trusts merit examination, supported by a co-management framework specifying decision rights, benefit shares, dispute resolution, and exit terms before investment. Lastly, planning guidelines should establish mechanisms for translating orally transmitted knowledge into planning instruments. Participatory mapping and community-authored *nagari* tourism plans offer practical routes for customary norms to enter the record.

LIMITATION OF THE STUDY

This study has several limitations that qualify its findings. First, the study did not interview customary leaders (*Niniak Mamak*) directly, so the central finding on their exclusion rests on accounts from other constituencies. Second, thirteen of the nineteen informants were male, and the community constituency had only three informants. This constrains analysis of gender and intra-community exclusion in a matrilineal society. Third, single-constituency focus groups reduced deference but precluded direct observation of cross-stakeholder negotiation, so inter-constituency contrasts are analytic reconstructions. Fourth, the analysis relies on translated material from a single regency at one post-pandemic moment, and the findings are offered for transferability rather than statistical generalisation.

Future research should engage *Niniak Mamak, Kerapatan Adat Nagari* and *Bundo Kanduang* as primary informants. It should also use participant observation or mixed-constituency deliberative forums to capture negotiation and conflict mediation as they unfold. Comparative studies across West Sumatran regencies and other settings of legal and customary pluralism, such as Bali's *desa adat*, Pacific customary tenure and *Andean* communal landholding, could test the scope conditions proposed here. Longitudinal and mixed-methods designs are also needed. These could operationalise field-specific salience, legitimacy and stage of engagement across a larger sample of *nagari* and evaluate whether consultation protocols or usufruct-based land arrangements reduce conflict in practice.

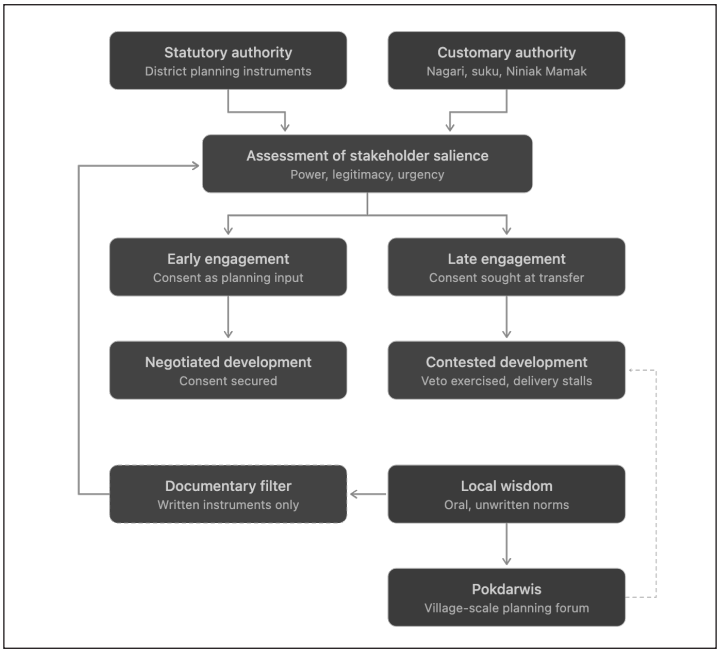

Figure 1. A conceptual model of customary salience in community-based tourism governance
Source: Author's synthesis

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Community Foundations of Green Tourism in a Coastal Village Through Place Attachment, Connectedness to Nature, and Support for Green Practices

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ABSTRACT

As the global tourism sector increasingly shifts toward sustainability, understanding the psychological and community-based factors that drive support for green tourism has become essential. This study examines the impact of place attachment and connectedness to nature on community support for green tourism development in a coastal village setting. Focusing on Kampung Tok Jembal, Terengganu, Malaysia, the research integrates key psychological constructs, including place identity, place dependence, affective attachment, and connectedness to nature within the framework of green tourism engagement. A purposive sampling strategy was used to recruit 200 residents who had lived in the village for at least two years and were actively involved in tourism-related activities, including homestay operations, local entrepreneurship, and community-based tourism programmes. Data were collected through structured self-administered questionnaires and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The results revealed that place identity and affective attachment significantly influenced connectedness to nature, which strongly predicted support for green tourism development. Moreover, connectedness to nature mediated the relationships between place-based emotional bonds and pro-environmental support. These findings provide theoretical insights into the psychological mechanisms that underpin local environmental engagement and offer practical implications for sustainable tourism planning. By highlighting the role of emotional and identity-driven connections to place and

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nature, this study contributes to the design of participatory, community-focused sustainability strategies for tourism development in coastal regions.

Keywords: Coastal village tourism, community engagement, connectedness to nature, green tourism, place attachment, pro-environmental behaviour

INTRODUCTION

In recent decades, the emergence of green tourism has garnered increasing attention as societies strive to address the environmental challenges posed by traditional tourism practices (Tok et al., 2024). Green tourism emphasises sustainable approaches that prioritise environmental stewardship, community engagement, and cultural preservation, making it particularly relevant in coastal villages where the delicate balance between tourism development and ecological integrity is paramount (Daneshwar & Revaty, 2024; Tehseen et al., 2024). The integration of sustainability in tourism practices has instigated a paradigm shift in how tourism is conceptualised and executed, particularly in regions characterised by rich biodiversity and unique cultural heritages, such as many coastal villages worldwide (Lukman et al., 2022).

Coastal communities are often situated in ecologically sensitive areas that face significant pressures from tourism-related activities (Lazzari et al., 2021). These pressures could cause ecological damage, loss of biodiversity, and cultural homogenisation (Newton et al., 2020). Consequently, green tourism emerges as a transformative strategy that seeks to mitigate these impacts by fostering practices that are not only ecologically sustainable but also economically viable and socially equitable. Recent literature suggests that green tourism can enhance the resilience of coastal communities, offering pathways for economic development that do not compromise environmental integrity (Hidayat et al., 2023; Ma et al., 2024). However, a key challenge remains in securing local community participation and long-term commitment to sustainability initiatives, as community engagement is often influenced by socio-cultural (Caperon et al., 2022), economic (Rahman & Baddam, 2021), and psychological factors (Kelvin, 2024).

The relevance of this challenge is evident in Kampung Tok Jembal and the wider Kuala Nerus coastal setting, where local development plans position the coastal beach network as a key eco-tourism attraction that requires careful environmental stewardship (PlanMalaysia, 2025). At the same time, tourism-related interventions along the Tok Jembal coastline have attracted public and industry attention, reflecting the sensitivity of coastal tourism development and the importance of maintaining environmental conditions that support destination attractiveness (Bernama, 2019). More broadly, the coastal environment in Kuala Nerus has been discussed in relation to shoreline

dynamics and coastal management responses, highlighting the practical need for sustainability-oriented development and local support in coastal areas (Zulfakar et al., 2020). However, as widely documented in sustainable tourism research, translating sustainability goals into meaningful and sustained community engagement remains challenging in many coastal contexts, where participation may be uneven and difficult to institutionalise (Reindrawati, 2023). Against this backdrop, examining how residents' place-based bonds and connectedness to nature shape support for green tourism development becomes practically important for strengthening community participation and improving the long-term effectiveness of sustainability-oriented tourism initiatives.

Within this context, community support is widely recognised as a foundation of sustainable tourism development. Local residents play a dual role as both custodians of environmental resources and active participants in tourism-related activities, particularly in community-based tourism settings. Existing studies suggest that residents' support for sustainable or green tourism is shaped by a combination of economic expectations, socio-cultural considerations, and psychological factors (Kelvin, 2024; Rahman & Baddam, 2021). Among these, place-based psychological bonds have received increasing attention for their role in fostering environmental concern and pro-environmental behaviour (Aytekin et al., 2023; Dwyer et al., 2019).

The literature further indicates that place attachment is an important psychological driver of pro-environmental behaviour and support for sustainable tourism (Aytekin et al., 2023; Elshaer et al., 2024). Individuals who feel strongly attached to their place are more likely to value its natural and cultural attributes and support initiatives aimed at preserving them (Elshaer et al., 2024). Nevertheless, place attachment is a multidimensional construct encompassing distinct dimensions such as place dependence, place identity, and affective attachment (Scannell & Gifford, 2010; Williams & Vaske, 2003). Existing studies have often treated place attachment as a unified construct or focused on its direct effects on pro-environmental behaviour, resulting in mixed and sometimes inconsistent findings, particularly in community-based tourism contexts.

Similarly, connectedness to nature has emerged as a key psychological construct for explaining pro-environmental attitudes and behaviours. Connectedness to nature refers to the extent to which individuals perceive themselves as part of the natural world rather than separate from it (Barragan-Jason et al., 2022; Lee et al., 2015). Research consistently demonstrates that individuals with stronger connectedness to nature exhibit greater environmental concern and are more likely to engage in environmentally responsible behaviours (Bankole & Adesina, 2024; Zhang et al., 2023). In tourism, meaningful interactions with natural environments can further strengthen this sense of connection, reinforcing support

for sustainability-oriented tourism practices (Chen et al., 2023; Luo et al., 2024).

Despite the relevance of both place attachment and connectedness to nature, prior research has primarily examined these constructs independently or modelled them as parallel predictors of environmental outcomes (Li et al., 2023; Ramkissoon et al., 2013). Consequently, there remains a limited understanding of how different dimensions of place attachment are translated into broader environmental orientations that motivate support for green tourism development, particularly at the community level (Ramkissoon, 2020; Mandić et al., 2025). Moreover, while sustainability-oriented perspectives such as the Green Paradigm Theory emphasise ethical responsibility, environmental stewardship, and community participation, they are often applied as normative backdrops rather than being explicitly linked to the psychological mechanisms that drive residents' support for green tourism development initiatives (Bramwell & Lane, 2011; Carvajal-Trujillo et al., 2024; Han et al., 2023).

Addressing these gaps, this study examines the interrelationships between place attachment, connectedness to nature, and support for green tourism development within a coastal village context. Focusing on Kampung Tok Jembal, Terengganu, Malaysia, the study integrates Place Attachment Theory, the Connectedness to Nature framework, and Green Paradigm Theory to develop a comprehensive model explaining how residents' place-based bonds and human–nature relationships shape their support for environmentally responsible tourism development. By distinguishing between place dependence, place identity, and affective attachment, the study explores the uneven psychological pathways through which different forms of place attachment influence connectedness to nature and subsequent support for green tourism development.

LITERATURE REVIEW

Theoretical Background

This study draws on three interconnected theoretical frameworks: Place Attachment Theory, the Connectedness to Nature Framework, and Green Paradigm Theory, to examine the foundations of green tourism development in coastal village communities. These frameworks are integrated to explain how emotional and functional bonds with place, human–nature relationships, and sustainability-oriented value systems collectively shape community support for environmentally responsible tourism development.

Place Attachment Theory explains how individuals develop emotional, cognitive, and functional bonds with places that are meaningful to their lives (Altman & Low, 1992; Scannell & Gifford, 2010). Within tourism and environmental studies, place attachment is commonly operationalised through dimensions such as place dependence, place identity, and affective attachment (Williams & Vaske, 2003). In coastal village contexts, where livelihoods, cultural practices, and social identities are closely tied to land and

marine environments, such attachments tend to be particularly strong (Ispas et al., 2021; Silva et al., 2021). Prior research suggests that strong place attachment can enhance residents' sense of belonging and motivate protective attitudes toward local environments, thereby influencing their responses to tourism development initiatives (Aytekin et al., 2023; Cheng et al., 2022). However, while Place Attachment Theory effectively explains why individuals value and care for specific places, it provides limited insight into how these place-based bonds translate into broader environmental orientations and support for sustainability-driven tourism development.

To address this limitation, the Connectedness to Nature Framework focuses on individuals' perceived emotional and psychological relationship with the natural world. Connectedness to nature reflects the extent to which individuals see themselves as part of nature rather than separate from it (Barragan-Jason et al., 2022; Lee et al., 2015). Research has consistently shown that individuals with higher levels of connectedness to nature exhibit stronger environmental concern and are more likely to engage in pro-environmental behaviours (Bankole & Adesina, 2024; Zhang et al., 2023). Particularly in ecologically sensitive areas such as coastal regions, repeated and meaningful interactions with natural environments can foster a more profound sense of connectedness (Li et al., 2023; Luo et al., 2024). By extending beyond place-specific attachments, this framework helps explain how local environmental experiences evolve into more generalised environmental orientations that support sustainability-driven tourism development.

At a broader normative level, Green Paradigm Theory provides a sustainability-oriented perspective that situates individual and community attitudes within ethical and developmental considerations. Rooted in sustainable development principles (WCED, 1987), the green paradigm advocates a shift away from growth-centric development models toward approaches that balance ecological preservation, social equity, and economic well-being (Mowforth & Munt, 2015). This paradigm emphasises community participation, environmental stewardship, and culturally respectful development practices (Phoochinda, 2018). Although widely referenced in discussions of sustainable tourism, the green paradigm is often treated as a contextual backdrop rather than being explicitly linked to the psychological mechanisms that drive community support for green tourism initiatives.

Despite the extensive use of these theories in tourism and environmental research, existing studies have largely examined them in isolation (Daryanto & Song, 2021; Lee, 2011; Ramkissoon et al., 2013). Prior research has predominantly focused on either place attachment or connectedness to nature as direct predictors of pro-environmental attitudes or behaviours (Li et al., 2023; Mayer & Frantz, 2004), without sufficiently explaining how place-based bonds are translated into broader environmental orientations that support

sustainability-driven tourism development (Mandić et al., 2025; Yoon et al., 2024). Moreover, few studies have explicitly integrated a normative sustainability framework, such as the Green Paradigm Theory, to contextualise these psychological processes within community-level support for green tourism (Hunter, 1997; Bramwell & Lane, 2011). As a result, the theoretical mechanisms linking emotional and functional attachment to place, human-nature connectedness, and support for green tourism development remain fragmented and underdeveloped (Daryanto & Song, 2021; Mandić et al., 2025).

By integrating Place Attachment Theory, the Connectedness to Nature Framework, and Green Paradigm Theory, this study addresses this gap by offering a coherent theoretical explanation of how functional, identity-based, and affective bonds with place foster connectedness to nature, which in turn shapes community support for green tourism development. This integrative approach enables the study to bridge individual-level psychological processes with collective sustainability-oriented outcomes, thereby advancing a more comprehensive understanding of green tourism development in coastal village communities.

Hypotheses Development

Place dependence, derived from Place Attachment Theory, reflects an individual's functional reliance on a place to satisfy daily needs and promote emotional well-being (Scannell & Gifford, 2010; Williams & Vaske, 2003). From a theoretical perspective, such reliance increases the frequency and depth of interaction with local environments, particularly in nature-dependent contexts such as coastal villages. However, prior tourism studies have often treated place dependence as a direct predictor of pro-environmental outcomes, without clearly explaining the psychological mechanism through which functional attachment to place fosters broader environmental orientations (Daryanto & Song, 2021; Lee, 2011; Ramkissoon et al., 2013).

Integrating Place Attachment Theory with the Connectedness to Nature Framework, this study argues that place dependence enhances connectedness to nature by embedding individuals' functional reliance on place into a broader human-nature relationship. When individuals depend on their local environment for livelihoods and everyday activities, they are more likely to internalise nature as part of their lived experience, strengthening emotional and psychological inclusion of the natural world (Mayer & Frantz, 2004). Empirical evidence further supports this mechanism in nature-based and tourism settings (Chen & Liu, 2024; Yoon et al., 2024).

Synthesising this theoretical reasoning, place dependence is expected to operate as an antecedent to connectedness to nature by transforming place-based reliance into broader environmental affiliation. Accordingly, the following hypothesis is proposed:

H1: Place dependence positively influences connectedness to nature.

Place identity, derived from Place Attachment Theory, refers to the extent to which individuals incorporate a place into their self-concept and define themselves in relation to their environment (Scannell & Gifford, 2010; Williams & Vaske, 2003). From a theoretical perspective, when a place becomes central to individuals' identity, the surrounding natural environment is no longer perceived as external but as an integral part of the self. This identity-based alignment fosters a sense of belonging that extends beyond physical space to include emotional and psychological connectedness with nature.

The Connectedness to Nature Framework conceptualises self-environment integration as a key antecedent of nature connectedness, whereby strong place identification increases individuals' perceptions of being embedded in the natural world (Lumber et al., 2017). In ecologically sensitive settings, place identity operates as a cognitive-emotional mechanism that strengthens individuals' sense of inclusion in nature (Berze & Dúll, 2024). Rather than operating merely as an emotional bond, place identity aligns personal identity with environmental values, making connectedness to nature a natural psychological outcome of strong place-based self-definition.

Taken together, these theoretical perspectives suggest that place identity provides a direct pathway through which attachment to place is translated into a deeper psychological connection with nature. Given this context, the study proposes the following hypothesis:

H2: Place identity positively influences connectedness to nature.

Affective attachment refers to the emotional bond individuals form with places through meaningful and repeated experiences, particularly within natural environments (Scannell & Gifford, 2010). Theoretically, emotional engagement plays a crucial role in fostering a connection to nature due to its affective responses. This includes feelings of comfort, pride, or emotional fulfilment that enhance psychological closeness and perceived kinship with the natural world (Mayer & Frantz, 2004).

Prior studies indicate that emotionally rich interactions with natural settings enhance individuals' sense of belonging to nature and reinforce environmentally oriented attitudes (Branham, 2024; Zhang et al., 2023). Affective attachment formed through repeated and emotionally meaningful experiences has been shown to deepen individuals' emotional bonds with nature, thereby strengthening connectedness to nature and encouraging environmental stewardship (Li & Song, 2024; Rezapouraghdam et al., 2024). All things considered, this suggests that emotional attachment to place functions as a key affective pathway through which individuals develop a stronger connection to the natural environment. From this foundation, the study advances the following hypothesis:

H3: Affective attachment positively influences connectedness to nature.

Connectedness to nature refers to how individuals see themselves as part of the natural world and form an emotional bond with it (Branham, 2024). From a theoretical perspective, individuals who experience a strong sense of connectedness to nature are more likely to internalise environmental values and develop a moral orientation toward environmental protection. This internalisation extends beyond personal attitudes and behaviours, shaping support for collective and development-oriented initiatives that prioritise environmental sustainability, such as green tourism (WCED, 1987).

Empirical research supports this theoretical linkage by demonstrating that connectedness to nature plays a central role in fostering pro-environmental orientations within tourism contexts. Prior studies consistently demonstrate that connectedness to nature plays a central role in shaping pro-environmental orientations and sustainability-related support within tourism contexts (Chen et al., 2023; Luo et al., 2024; Pearce et al., 2022; Shimul et al., 2024). Similarly, Pearce et al. (2022) demonstrated that connectedness to nature, in conjunction with personal moral norms, directly influences pro-environmental behaviours among visitors to protected areas, suggesting that nature connectedness strengthens normative commitment to environmental protection. Tourism experiences themselves can further reinforce this relationship. Chen et al. (2023) demonstrated that positive rural tourism experiences enhance connectedness to nature, which in turn increases green consumption intentions, while Luo et al. (2024) showed that sensory engagement with natural environments promotes pro-environmental responses through connectedness to nature and place attachment.

Importantly, when viewed through the lens of Green Paradigm Theory, connectedness to nature provides the psychological foundation through which individuals translate emotional bonds with the natural environment into support for environmentally responsible tourism development. In community-based and ecologically sensitive settings, such as coastal villages, individuals who feel a connection to nature are more likely to endorse tourism initiatives that balance ecological preservation, community well-being, and long-term sustainability, rather than prioritising short-term economic gains. In line with this, both theoretical reasoning and empirical evidence suggest that connectedness to nature is a critical antecedent of support for green tourism development. Taking this into account, the following hypothesis is proposed:

H4: Connectedness to nature positively influences support for green tourism development.

Connectedness to nature serves as a key psychological mechanism through which

place-based attachments are translated into support for green tourism development. While place dependence, place identity, and affective attachment capture individuals' functional, cognitive, and emotional bonds with place, these bonds alone do not fully explain why individuals extend their concern toward environmentally responsible tourism initiatives (Guazzini et al., 2025; Sapiains et al., 2025). Drawing on the Connectedness to Nature Framework, individuals who feel emotionally and psychologically embedded within the natural world are more likely to internalise ecological values and express support for development approaches that prioritise environmental protection (Luo et al., 2024; Zhang et al., 2023).

From a theoretical perspective, connectedness to nature explains how place-based bonds evolve into sustainability-oriented support. These processes collectively foster a stronger sense of connectedness to nature, which in turn motivates support for green tourism development aligned with ecological preservation and community well-being (Elshaer et al., 2024; Mousighichi et al., 2024). Thus, connectedness to nature is expected to mediate the relationships between place attachment dimensions and support for green tourism development. The proposed research framework is presented in Figure 1. In light of this, the following hypotheses are suggested:

H5: Connectedness to nature mediates the relationship between place dependence and support for green tourism development.

H6: Connectedness to nature mediates the relationship between place identity and support for green tourism development.

H7: Connectedness to nature mediates the relationship between affective attachment and support for green tourism development.

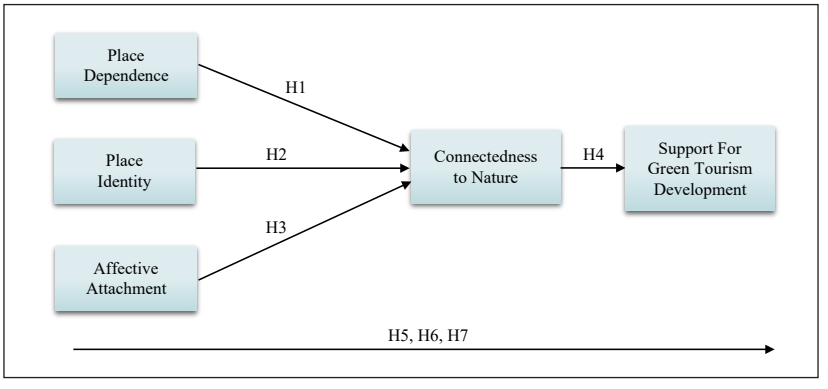

Figure 1. Study framework
Source: Authors' own work

METHOD

This study employed a quantitative, cross-sectional research design to examine the relationships between place dependence, place identity, affective attachment, connectedness to nature, and support for green tourism development in a local community context. The research was conducted in Tok Jembal, a coastal village located in Kuala Nerus, Terengganu, Malaysia.

Tok Jembal was selected as the study site due to its documented integration into regional tourism development initiatives. This is reflected in the prevalence of community-run homestays and accommodation options in the area, as well as broader state support for community-based tourism (Ismail et al., 2023; Terengganu Strategic & Integrity Institute, 2021). Previous planning documents and regional development reports have identified Tok Jembal as a locality experiencing tourism-related economic diversification alongside its traditional residential function (Majlis Bandaraya Kuala Terengganu, 2014; Tourism Terengganu, 2018). This dual character as both a residential and tourism-involved community makes Tok Jembal an appropriate context for examining how local place-based bonds and emotional connections influence residents' support for green tourism development.

Sampling and Data Collection

Data were collected from November 2024 to January 2025 through structured, self-administered questionnaires. Trained enumerators distributed the questionnaires in person, ensuring that respondents clearly understood the items and could seek clarification when needed. This approach helped maximise response quality and minimise the risk of incomplete answers.

A purposive sampling strategy was employed to target residents of Tok Jembal who were directly or indirectly involved in tourism-related activities. To ensure that participants had relevant experiences and insights, a screening question was included at the beginning of the questionnaire. Only respondents who (i) were 18 years of age or older, (ii) had lived in Tok Jembal for at least two years, and (iii) were actively involved in tourism-related activities such as running homestays, operating local businesses, or participating in community-based tourism programmes were eligible to participate.

Sample size estimation was conducted using G*Power 3.1 software (Faul et al., 2009), adopting a statistical power analysis approach instead of a population-proportion-based calculation. This decision was based on the absence of precise demographic data for the tourism-involved population in Tok Jembal, and the study aimed to test theoretical relationships rather than generalise findings to the entire population. An a priori power analysis was performed for linear multiple regression (fixed model, R^2 increase) using a medium effect size ($f^2 = 0.15$), a significance level (α) of 0.05, power ($1-\beta$) of 0.80, and three predictors in the structural model. The result indicated a minimum required sample size of 77 respondents.

Table 1
Questionnaire items

Section	Constructs	No. of Items	Source
B	Place Dependence (PD)	3	Elshaer et al. (2024)
C	Place Identity (PI)	3	
D	Affective Attachment (AA)	3	
F	Support for Green Tourism Development (SGTD)	5	
E	Connectedness to Nature (CTN)	7	Chen et al. (2023)

Source: Authors' own work

A more conservative sample size was pursued, given the application of Partial Least Squares Structural Equation Modelling (PLS-SEM), which involves latent constructs and mediation paths. Following MacCallum et al. (1996), who recommend larger samples for structural equation modelling involving complex models or uncertain commonalities, the study aimed for more than 150 participants. After accounting for non-responses and data screening, a final sample of 200 valid responses was obtained, ensuring sufficient statistical power for PLS-SEM analysis using SmartPLS 4.

Measurement Instrument and Validity

The questionnaire was initially developed in English and then translated into Bahasa Malaysia to ensure clarity and contextual relevance for local respondents. It comprised six key sections to capture demographic information and measure the study's core constructs. Section A gathered basic demographic data such as gender, age, ethnicity, marital status, education level, years of residence in Tok Jembal, and the respondent's involvement in tourism-related activities. The details of the following sections in the questionnaire are presented in Table 1.

All items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), allowing respondents to express varying levels of agreement with each statement. To ensure clarity and content appropriateness, face validity was first established through consultations with three experts in tourism and sustainability, whose feedback informed minor revisions to language and item phrasing. Subsequently, a preliminary pilot test was conducted with 30 residents from a nearby community involved in tourism to assess the reliability and comprehensibility of the measurement instrument. Among the participants, 20 were actively involved in tourism-related activities, including 10 individuals who had more than five years of experience in the sector. This ensured that the pilot participants had relevant contextual knowledge.

Consistent with recommendations in methodological literature, pilot sample sizes ranging from 20 to 30 respondents are considered sufficient for assessing instrument clarity, internal consistency,

and preliminary reliability in survey-based studies (Hair et al., 2019; Taherdoost, 2016). The pilot test yielded Cronbach's Alpha values exceeding the 0.70 threshold for all constructs, indicating satisfactory internal consistency. Based on the pilot findings and participant feedback, minor refinements were made to improve item clarity and cultural appropriateness, thereby strengthening the instrument's validity and reliability for the main data collection.

RESULTS

Respondent Demographic Profile

A total of 200 respondents who met the screening criteria were included in the study. All had lived in Kampung Tok Jembal, Terengganu, for at least two years and were directly involved in tourism-related activities, such as running homestays or local businesses. The sample comprised 54% males and 46% females. Respondents were mostly between 18 and 25 years old (45%), followed by those aged 26 to 35 (22%) and 36 to 45 (20.5%). Over half (53.5%) reported earnings below RM3,000 per month. Regarding educational background, a majority held a bachelor's degree (55%). Most had resided in the area between 2 and 6 years. While some respondents were students, their inclusion was based on active involvement in tourism-related initiatives, such as assisting in family-run tourism businesses or contributing to local tourism events. A majority (79%) lived in areas undergoing green tourism development, with 74.5% reporting participation in such initiatives and 88% expressing support for the development of green tourism in the village.

Measurement Model

The measurement model was assessed to ensure its reliability and convergent validity (Hair et al., 2020). Based on Table 2, the internal consistency of the constructs was evaluated using Cronbach's Alpha (α) and Composite Reliability (CR), with all values exceeding the acceptable threshold of 0.7. Specifically, CR values ranged from 0.850 to 0.932, indicating high internal consistency across all constructs.

Convergent validity was assessed through the Average Variance Extracted (AVE), which reflects the proportion of variance captured by the construct about the variance due to measurement error. All constructs reported AVE values above the 0.50 benchmark, with values ranging from 0.690 (Connectedness to Nature) to 0.904 (Place Dependence), affirming that each construct explained more than half of the variance in its observed variables (Fornell & Larcker, 1981).

In terms of indicator reliability, the majority of item loadings were above the recommended cut-off of 0.70 (Table 2). The exception was item CTN3, which recorded a loading of 0.689. However, based on the guidelines by Hair et al. (2017), items with loadings between 0.4 and 0.7 may be retained if the overall CR and AVE values are satisfactory, which is the case in this model. Therefore, CTN3 was retained to preserve the theoretical comprehensiveness of the Connectedness to Nature construct.

Table 2
Measurement model assessment

Construct Name	Item Loadings	Alpha	CR	AVE
Place Dependence	–	0.895	0.900	0.904
PD1	*0.946*			
PD2	*0.956*			
Place Identity	–	0.914	0.915	0.853
PI1	*0.915*			
PI2	*0.921*			
PI3	*0.936*			
Affective Attachment	–	0.849	0.850	0.769
AA1	*0.902*			
AA2	*0.866*			
AA3	*0.861*			
Connectedness to Nature	–	0.924	0.932	0.690
CTN1	*0.849*			
CTN2	*0.864*			
CTN3	*0.689*			
CTN4	*0.832*			
CTN5	*0.829*			
CTN6	*0.889*			
CTN7	*0.848*			
Support for Green Tourism Development	–	0.922	0.924	0.811
SGTD1	*0.879*			
SGTD2	*0.928*			
SGTD3	*0.903*			
SGTD4	*0.891*			

Source: Authors' own work

Discriminant validity was assessed using the heterotrait-monotrait (HTMT) ratio of correlations, a robust criterion for detecting discriminant validity issues in structural equation modelling (Henseler et al., 2015). A commonly accepted threshold for HTMT is 0.90, which indicates that constructs are empirically distinct even when conceptually related (Hair et al., 2019). While more stringent cut-offs, such as 0.85, are recommended for theoretically less correlated constructs (Roemer et al., 2021), the 0.90 threshold was deemed appropriate in this study due to the interrelated nature of the constructs under investigation.

As shown in Table 3, all HTMT values ranged from 0.576 to 0.890. Although the HTMT values for Affective Attachment and Place Dependence (HTMT = 0.890) and Affective Attachment and Place Identity (HTMT = 0.876) approached the upper boundary, they remained below the threshold of 0.90. This indicates that these constructs, while related, are empirically distinguishable. All other construct combinations exhibited HTMT values well

Table 3
HTMT ratios for discriminant validity

	AE	CTN	PD	PI	SGTD
AE					
CTN	0.772				
PD	0.890	0.714			
PI	0.876	0.754	0.879		
SGTD	0.621	0.672	0.576	0.591	

*AE = Affective Attachment, CTN = Connectedness to Nature, PD = Place Dependence, PI = Place Identity, SFG = Support for Green Tourism Development
Source: Authors' own work

Table 4
Structural estimates (path analysis)

Hypotheses	Path Analysis	Decision	Beta (β)	Confidence Interval (Bias Corrected)		f^2	R^2	Q^2
				2.5%	97.5%			
H1	Place Dependence -> Connectedness to Nature	Not supported	0.123	-0.046	0.323	0.111	0.548	
H2	Place Identity -> Connectedness to Nature	Supported	0.344***	0.141	0.534	0.048		
H3	Affective Attachment -> Connectedness to Nature	Supported	0.332***	0.134	0.546	0.075		
H4	Connectedness to Nature -> Support for Green Tourism Development	Supported	0.633***	0.490	0.745	0.655	0.395	0.372

*Note. ***(p <0.001) **(p<0.01) *(p <0.05)*
f^2: Effect size; R^2: Explanatory variance; Q^2: blindfolding
Source: Authors' own work

below the cut-off, providing additional support for the discriminant validity of the model.

Structural Model

To assess the structural model, bootstrapping procedures were applied using the Partial Least Squares (PLS) algorithm to test the hypotheses' significance and predictive strength. Key indicators examined included the path coefficients (β), t-statistics (p-values), confidence intervals (bias-corrected), effect sizes (f^2), explanatory variance (R^2), and predictive relevance (Q^2), as recommended by Hair et al. (2020). The structural estimates are summarised in Table 4.

The results revealed that the path from Place Dependence to Connectedness to Nature was not statistically significant (β = 0.123, 95% CI: -0.046 to 0.323), and therefore, H_1 was not supported. Despite a small effect size ($f^2 = 0.111$), the confidence interval crossed zero, indicating insufficient evidence for a significant effect. In contrast, H_2 was supported, demonstrating that Place Identity significantly influenced Connectedness to Nature (β = 0.344, p < 0.001, 95% CI: 0.141 to 0.534), with a small effect size ($f^2 = 0.048$) and substantial explanatory power ($R^2 = 0.548$). Similarly, H_3 was supported, indicating a significant relationship between Affective Attachment and Connectedness to Nature (β = 0.332, p < 0.001, 95% CI: 0.134 to 0.546), also with a small-to-medium effect size ($f^2 = 0.075$). The strongest relationship emerged in H_4, where Connectedness to Nature significantly predicted Support for Green Tourism Development (β = 0.633, p < 0.001, 95% CI: 0.490 to 0.745), demonstrating a large effect size ($f^2 = 0.655$) and a robust level of variance explained in the dependent construct ($R^2 = 0.395$). The Q^2 value of 0.372 also confirmed the model's predictive relevance in this relationship. These results provide strong empirical support for the proposed model, with three out of four hypotheses validated and R^2 and Q^2 values meeting the thresholds for substantial explanatory and predictive capacity (Henseler, 2012; Hair et al., 2020).

Mediation Effect

The results of the mediation analysis are summarised in Table 5. The mediating role of Connectedness to Nature was analysed with specific indirect effects using bootstrapping procedures and a 95% bias-corrected confidence interval. The

Table 5
Mediation effects testing (indirect path analysis)

Hypotheses	Path Analysis	Beta (β)	P-Values	Confidence Interval (Bias Corrected)		Result
				2.5%	97.5%	
H5	Place Dependence -> Connectedness to Nature -> Support for Green Tourism Development	0.078	0.191	-0.029	0.209	Not Significant
H6	Place Identity -> Connectedness to Nature -> Support for Green Tourism Development	0.078**	0.001	0.090	0.354	Significant
H7	Affective Attachment -> Connectedness to Nature -> Support for Green Tourism Development	0.211**	0.006	0.082	0.362	Significant

Note. *** (p<0.001) **(p<0.010) *(p<0.05)
Source: Authors' own work

first indirect path, Place Dependence → Connectedness to Nature → Support for Green Tourism Development, yielded a non-significant result (β = 0.078, p = 0.191, 95% CI: -0.029 to 0.209). Since the confidence interval includes zero, it indicates that Connectedness to Nature does not mediate the relationship between Place Dependence and Support for Green Tourism Development, and therefore, this indirect effect is not statistically supported.

This non-significant finding suggests that functional reliance on place alone may not be sufficient to foster a deeper psychological connection with nature within the study context. In tourism-integrated communities, such as Tok Jembal, residents may primarily depend on the place for economic or livelihood-related reasons, rather than for experiential or emotional engagement with the natural environment. As a result, place dependence may reflect utilitarian attachment that does not necessarily translate into a stronger sense of connectedness to nature. This distinction is consistent with prior studies suggesting that functional attachment may be weaker than identity-based or affective bonds in predicting environmental orientations (Scannell & Gifford, 2010; Williams & Vaske, 2003).

In contrast, the mediation path Place Identity → Connectedness to Nature → Support for Green Tourism Development was significant (β = 0.078, p = 0.001, 95% CI: 0.090 to 0.354), supporting H6. This suggests that Connectedness to Nature serves as a significant mediator, reinforcing the indirect influence of Place Identity on Support for Green Tourism Development. The result implies that individuals who identify more strongly with a place tend to feel a deeper connection to nature, enhancing their green-supportive behaviours. Similarly, the indirect path Affective Attachment → Connectedness to Nature → Support for Green Tourism Development also demonstrated a significant mediation effect (β = 0.211, p = 0.006, 95% CI: 0.082 to 0.362), confirming H7. This finding indicates that individuals who are emotionally attached to a place tend to foster a stronger sense of connectedness to nature, positively affecting their support for environmentally sustainable practices.

DISCUSSION

This study provides valuable insights into the role of place-based constructs in shaping connectedness to nature and subsequent pro-environmental support. The findings demonstrate that Place Identity and Affective Attachment are significant predictors of Connectedness to Nature, while Place Dependence does not exhibit a statistically significant effect. This suggests that emotional and identity-related connections to place may profoundly influence individuals' perceived relationship with the natural environment more than utilitarian or functional reliance on place (Berze & Dúll, 2024). This finding aligns with earlier scholarship, which asserts that the symbolic meanings embedded in personal and emotional associations with place play a crucial role in fostering a sense of environmental connectedness (Chen & Liu, 2024).

The lack of significance for Place Dependence in predicting Connectedness to Nature warrants further reflection. While the literature often associates place dependence with behavioural intention (Wan et al., 2022), the findings suggest that utilitarian reliance alone may be insufficient to inspire emotional or ecological engagement. In the context of Tok Jembal, many respondents, although involved in tourism activities, may view their relationship with the place through a practical or economic lens rather than a deeply personal or affective one. This could be particularly relevant in communities where tourism is emerging as a commercial opportunity rather than a culturally embedded practice. Moreover, the dominance of external tourism stakeholders or institutional decision-making in green tourism development may reduce the perceived agency or ownership among local actors. Without a sense of influence or co-creation, residents may engage in tourism functionally but remain disconnected from the environmental narratives that underpin the values of green tourism. This interpretation aligns with Ruiz and Hernández (2025), who argue that place dependence lacking emotional resonance may fail to activate the cognitive pathways needed for ecological concern.

In contrast, the significant positive relationships between Place Identity and Affective Attachment with Connectedness to Nature reaffirm the importance of emotional and identity-driven dimensions in fostering nature-relatedness. These results confirm that individuals who strongly identify with their community and hold emotional ties to their surroundings are more likely to develop meaningful relationships with nature. The findings extend the theoretical argument that affective and identity-based bonds are critical in shaping pro-environmental behaviour (Atik et al., 2023; Zhang et al., 2023). In Tok Jembal, such bonds may stem from residents' participation in cultural and tourism-related activities that affirm their connection to the place, such as homestays, heritage crafts, or community-based eco-events. These emotional investments, often rooted in social interactions and shared environmental experiences, are more likely to cultivate a sense of environmental stewardship compared to purely functional engagement.

The strong predictive effect of Connectedness to Nature on Support for Green Tourism Development highlights its central role in translating place-based emotions into environmental action. The large effect size ($f^2 = 0.655$) and substantial variance explained ($R^2 = 0.395$) indicate the psychological weight of nature connectedness in shaping tourism-related behavioural intentions. This finding reinforces previous research by Chen et al. (2023) and Luo et al. (2024), who argue that emotional and sensory connections with nature are key motivators for sustainable engagement. In practical terms, this finding suggests that green tourism initiatives in coastal villages must prioritise experiences that foster affective and immersive connections with the natural environment. Programmes that encourage environmental

storytelling, hands-on eco-learning, or nature-embedded cultural performances may be particularly effective in deepening connectedness and fostering long-term support.

The mediation analysis further reveals the bridging role of Connectedness to Nature between place-based constructs and green tourism support. Specifically, Place Identity and Affective Attachment indirectly influenced Support for Green Tourism Development through Connectedness to Nature, while Place Dependence again showed no significant mediating effect. These patterns support the argument that emotional and symbolic place bonds are stronger psychological pathways to environmental engagement than practical dependence alone. This is consistent with Shipley et al. (2023), who cited that the emotional dimension of place attachment is more predictive of ecological concern than its functional counterpart. The finding also calls attention to the often-overlooked mediating mechanisms in environmental behaviour models. While many studies identify correlations between place and behaviour, fewer examine how these connections are psychologically internalised. The current findings offer empirical evidence that nature connectedness plays a key role in this internalisation process.

CONCLUSION

Theoretical Contributions

This study offers several important theoretical implications for the green tourism and environmental psychology literature by advancing the conceptualisation and explanation of community-level support for environmentally responsible tourism development. At a foundational level, the study contributes by integrating Place Attachment Theory, the Connectedness to Nature framework, and Green Paradigm Theory into a single explanatory model. While each of these perspectives has been widely applied in tourism and environmental research (Altman & Low, 1992; Bramwell & Lane, 2011; Hunter, 1997; Mayer & Frantz, 2004), prior studies have predominantly examined them in isolation or treated sustainability paradigms as broad normative contexts rather than as components of an integrated explanatory structure (Daryanto & Song, 2021; Mandić et al., 2025). By bringing these frameworks together, the present study provides a more coherent theoretical account of how place-based psychological bonds, human–nature relationships, and sustainability-oriented values jointly shape residents' support for green tourism development, particularly within coastal village contexts characterised by environmental vulnerability and strong community involvement (Elshaer et al., 2024; Silva et al., 2021).

A second key theoretical implication lies in the conceptualisation of connectedness to nature as a mediating psychological mechanism. Existing research has essentially treated connectedness to nature and place attachment as parallel or independent predictors of pro-environmental attitudes and behaviours (Li et al., 2023; Mayer &

Frantz, 2004; Ramkissoon et al., 2013). This study extends prior work by empirically demonstrating that connectedness to nature functions as a critical psychological bridge through which emotional and identity-based attachments to place are translated into support for green tourism development. This mediating perspective advances theoretical understanding by revealing the internal psychological process through which place-based meanings are transformed into broader environmental orientations, thereby addressing a recognised gap in models of community-based sustainability behaviour (Daryanto & Song, 2021; Luo et al., 2024; Zhang et al., 2023).

Third, the study contributes to the refinement of Place Attachment Theory by empirically distinguishing between its functional (place dependence), identity-based (place identity), and affective (affective attachment) dimensions and demonstrating their uneven influence on environmental orientations. Although place attachment has long been recognised as a multidimensional construct (Scannell & Gifford, 2010; Williams & Vaske, 2003), many empirical studies continue to operationalise it as a unified predictor of pro-environmental behaviour, contributing to inconsistent findings (Lee, 2011; Ramkissoon et al., 2013). The present findings clarify that utilitarian or functional reliance on place may be insufficient to foster a deeper sense of connectedness to nature or to generate support for green tourism development. In contrast, identity-based and affective attachments emerge as more influential pathways through which individuals internalise environmental values, a distinction that aligns with recent evidence emphasising the stronger role of symbolic and emotional place bonds in shaping ecological concern (Berze & Dúll, 2024; Shipley et al., 2023).

Collectively, these theoretical implications contribute to a more nuanced and psychologically grounded understanding of how community-place-nature relationships shape support for green tourism development. By explicitly linking place-based emotional and identity bonds to environmental support through connectedness to nature, the study advances existing theoretical debates in sustainable tourism and environmental psychology and provides a stronger foundation for future research seeking to integrate psychological attachment processes into sustainability-oriented tourism models (Ramkissoon et al., 2025; Zhang et al., 2024). The findings also open avenues for extending this integrated framework into other behavioural theories, such as the Value-Belief-Norm framework or the Theory of Planned Behaviour, to further enrich theoretical explanations of pro-environmental support within tourism contexts (Stern, 2000; Ajzen, 1991).

IMPLICATION OF THE STUDY

The findings provide context-specific implications for Tok Jembal and similar coastal communities in Malaysia, which are increasingly integrated into tourism activities. First, the significant roles of

place identity and affective attachment suggest that community-based tourism programmes in Tok Jembal should prioritise strengthening residents' emotional and symbolic connections to their coastal environment. Local councils and tourism agencies can support this by developing heritage-based storytelling, community-led interpretation activities, and cultural-ecological narratives that highlight Tok Jembal's fishing heritage, coastal lifestyle, and natural assets. Such initiatives can reinforce residents' sense of belonging and foster stronger stewardship toward local tourism development.

Second, since connectedness to nature strongly predicts support for green tourism development, practical interventions should focus on direct and meaningful engagement with coastal ecosystems. In Tok Jembal, this may include community-led beach conservation programmes, mangrove awareness activities, eco-guided coastal walks, and small-scale environmental education initiatives involving local residents and youth. These programmes can translate emotional bonds with nature into sustained support for environmentally responsible tourism practices, aligning with Malaysia's broader coastal sustainability agenda.

Third, the non-significant role of place dependence indicates that improving infrastructure or access alone is insufficient to foster support for green tourism development. Therefore, tourism planning in Tok Jembal should move beyond functional development by incorporating participatory planning mechanisms, where residents are actively involved in decision-making related to tourism projects. Encouraging local participation in tourism governance can strengthen community ownership and ensure that green tourism initiatives reflect local values and environmental priorities. Overall, these findings suggest that community stewardship programmes, emotional place-based engagement, and participatory planning are essential for strengthening long-term support for green tourism development in coastal Malaysian communities.

LIMITATION AND RECOMMENDATION FOR FUTURE RESEARCH

This study is not without limitations. Using a cross-sectional research design limits the ability to determine causality between constructs. Future research should employ longitudinal designs to track changes in place attachment and pro-environmental behaviours over time. Such approaches would offer greater insight into how emotional and cognitive bonds with place evolve in response to environmental or social changes. Additionally, the study relied on non-probability sampling, which may affect the generalisability of the findings. Future studies could employ probability sampling techniques and collect data from various geographic regions or destination types to validate the current findings across a more diverse population. Although the model explains a substantial proportion of variance in Support for

Green Tourism Development, it does not consider potential moderating or mediating influences such as environmental value orientation, frequency of nature exposure, or cultural context. Including constructs such as place satisfaction, environmental identity, or moral obligation in future models could yield more comprehensive insights. Researchers are also encouraged to explore the application of these findings in different destination contexts, including urban parks, marine environments, or culturally significant sites. Comparative studies across regions or cultural groups may offer further insight into context-dependent dynamics. Additionally, the use of qualitative or mixed-methods approaches could uncover deeper narratives and personal meanings associated with place, identity, and environmental responsibility.

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Elevating Malaysia's Intangible Cultural Heritage: Commercialising Batik and Songket for Sustainability

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ABSTRACT

Traditional *Songket* and *Batik* handicrafts are important intangible cultural heritages and are facing the threat of extinction due to market constraints, changing lifestyles, and lack of interest from the younger generation. Commercialisation may provide a strategy to link heritage preservation with economic viability, while also encouraging community involvement. However, the small and less competitive size of the craft market is a major challenge, affecting the income of entrepreneurs. Therefore, innovation and digitalisation are needed to support market access and adapt products to modern needs. This study aims to explore commercialisation strategies, assess existing supports including government policies, and identify traditional entrepreneurial actions that have an impact on *Songket* and *Batik* entrepreneurs. Using a qualitative approach, in-depth interviews were conducted with twelve stakeholders, including handicraft entrepreneurs, craft makers, and representatives from relevant government and non-governmental organisations**.** The findings also show that *Batik* involves greater design and material experimentation, whereas *Songket* is more strongly characterised by specialised weaving skills, labour-intensive production, remuneration, and skills transmission. These aspects may contribute to the cultural sustainability of *Songket* and *Batik* by supporting market access, adaptation, and the continuity of traditional craft practices. This study provides practical insights for institutions and stakeholders involved in developing programmemes for the commercialisation and sustainability of traditional craft heritage.

Keywords: Cultural heritage, commercialisation, intangible heritage, preservation, traditional handicrafts

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INTRODUCTION

Cultural heritage is part of human civilisation, encompassing tangible and intangible elements that define the identity and values of a community. Tangible and intangible heritage aspects are essential in fostering a sense of belonging, social cohesion, and identity within a community. Preserving cultural heritage is crucial in ensuring societies maintain their unique historical narratives while adapting to modern changes. Recognising its importance, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) advocates for preserving cultural heritage as part of sustainable development. The Sustainable Development Goals (SDGs) emphasise the importance of cultural heritage, with SDG 11.4 explicitly addressing the preservation of cultural heritage. Each region needs to preserve its unique culture to help its people maintain a sense of identity, understand the continuity of their culture, and promote the importance of cultural diversity and human creativity (UNESCO, 2021). Therefore, the value of local knowledge and skills in traditional craftsmanship is recognized as an important domain of intangible cultural heritage requiring safeguarding (UNESCO, 2023). Intangible cultural heritage encompasses practices, representations, expressions, knowledge, and skills passed down from generation to generation in a society (Ahmad et al., 2022). It involves oral traditions, performing arts, social practices, rituals, and skills related to traditional crafts that reflect a community's identity (Giovannini et al., 2021; Mathioudakis et al., 2022). In this context, the physical *Batik* and *Songket* textiles are tangible craft products, while the knowledge, skills, techniques, cultural meanings, and practices involved in producing them represent their intangible cultural heritage dimensions.

As part of cultural heritage, traditional handicrafts are produced by the arts and manual skills of local communities, and they embody local wisdom, refinement, and creativity in producing unique craft items. Traditional handicrafts play a role in preserving unique historical heritage and cultural values and shaping the community's identity. Traditional handicrafts therefore involve both tangible and intangible heritage dimensions. Whether tangible or intangible, these heritage dimensions have a role in promoting sustainable economic development, income generation, poverty eradication, and employment opportunities (Shafi, 2020). In addition, their role as a social unification mechanism aims to strengthen relationships between generations and enrich the lives of the community as a whole. Heritage acts as a bridge that connects the old and new generations. Craft heritage is not just a cultural element passed down but also a source of inspiration for social and economic growth (Ubertazzi, 2022). Several studies look at how preserving heritage crafts not only preserves the heritage but also helps local communities with income sources. Local handicrafts can be adapted in form and function to increase economic value. This means that preserving traditional crafts goes beyond conservation as it serves as a

way to foster local economic development and create employment opportunities (David et al., 2023; Permatasari et al., 2021). However, due to technological changes, preserving craft heritage faces challenges such as a lack of training opportunities, skills transfer issues, and small markets. In addition, entrepreneurs and craft makers, such as those involved in *Batik* and *Songket* enterprises, constantly deal with the high costs of business premises and maintenance of workshops or places to produce craft products (Ariffin et al., 2023).

In this context, preserving craft heritage is important as society becomes more modern and lifestyles change, especially when faced with a modern world. Modern lifestyles see how cultural heritage, including local traditional crafts, are beginning to be neglected and seen as irrelevant, putting them at risk of extinction (Jalani & Ramli, 2019). In addition to modernity issues, other issues, including lack of collaboration, business skills, and the absence of networks or platforms, threaten this heritage to remain and be sustainable (Makhitha, 2017). In this regard, these efforts need support and assistance, especially with relevant skills and partnerships to help their businesses, such as basic business skills and knowledge to identify new markets, manage scale, and adjust product use since traditional production and distribution methods are no longer suitable for use in today's technological world. This focus is also consistent with Malaysia's National Cultural Policy (2021), which emphasises the preservation and conservation of cultural heritage, as well as the development of a cultural economy. In this context, the commercialisation of *Batik* and *Songket* can be examined within the broader national agenda of sustaining cultural heritage while supporting its continued economic relevance (Ministry of Tourism, Arts and Culture Malaysia, 2021). *Batik* and *Songket* are examined together in this study because both are prominent Malaysian textile crafts in which commercially produced material objects are closely connected to culturally embedded knowledge, skills, aesthetic values, and craft practices. At the same time, they involve different production processes and forms of innovation. *Batik* allows adaptation through motifs, colouring, blocking techniques, and materials, whereas *Songket* relies more heavily on specialised weaving skills and labour-intensive production. Examining both crafts therefore makes it possible to identify common commercialisation strategies while recognising craft-specific challenges and support requirements. Given the challenges of commercialising heritage crafts, this qualitative study was conducted to evaluate the strategies used in heritage preservation, especially in commercialising *Batik* and *Songket* products that represent local art, knowledge, skills, and cultural values. Although previous studies have discussed issues such as innovation, digitalisation, market development, skills preservation, and institutional support in traditional craft industries, these dimensions are often examined separately. Less attention has

been given to how commercialisation, digitalisation, artisan innovation, and institutional support interact in sustaining Malaysian *Batik* and *Songket*, particularly from the combined perspectives of craft practitioners, entrepreneurs, and supporting institutions. Comparative understanding of whether *Batik* and *Songket* experience similar or different commercialisation challenges and support requirements also remain limited. Accordingly, this study aims to examine how *Batik* and *Songket* are commercialised by craft practitioners, entrepreneurs, and supporting institutions, with particular attention to the roles of digitalisation, institutional support, and artisan-led innovation in shaping their commercialisation. It further investigates how these commercialisation practices may support or constrain cultural sustainability, particularly in relation to the preservation of cultural meaning, artisan agency, and the intergenerational transmission of traditional knowledge and skills. Based on these objectives, the study addresses the following research questions:

RQ1 : How is *Batik* and *Songket* commercialised by craft practitioners, entrepreneurs, and supporting institutions?

RQ2 : What roles do digitalisation, institutional support, and artisan-led innovation play in the commercialisation of *Batik* and *Songket*?

RQ3 : How may these commercialisation practices support or constrain the cultural sustainability of *Batik* and *Songket*?

This study extends existing research by bringing together multi-stakeholder evidence on the commercialisation of *Batik* and *Songket* and interpreting these practices through the Cultural Sustainability Framework. Its principal contribution is empirical and policy-oriented, as it identifies both shared and craft-specific commercialisation strategies, challenges, and support requirements that are relevant to craft practitioners and supporting institutions. The originality of the study therefore lies not in proposing a new theory, but in integrating multi-stakeholder evidence, a *Batik-Songket* comparison, and the Cultural Sustainability Framework to understand how commercialisation may create conditions for cultural continuity.

LITERATURE REVIEW

The preservation of traditional craft heritage plays an important role in maintaining the community's cultural diversity, utilising local resources, fostering tolerance, and stimulating the creativity of local communities. Along with that, the commercialisation of traditional handicrafts such as *Batik* and *Songket* is an effort that supports the goal of heritage preservation. The commercialisation of craft heritage has received increasing attention in recent years, driven by digital transformation and

government assistance. Digitalisation has emerged as an important strategy, allowing craftspeople to bypass intermediaries and directly access a broader market through e-commerce platforms, thus increasing profitability and sustainability (Koe & Wulandari, 2023). The potential of local resources can be changed in terms of form and function to support economic value (Permatasari et al., 2021). In this regard, people's craft-making skills need to be utilised in the economic sector, which can impact the preservation of heritage handicrafts. Local handicrafts produce something that needs to be appropriately preserved because they symbolise a nation's identity and society's identity. Indigenous or traditional knowledge refers to knowledge systems, creation, innovation, and cultural expression passed from generation to generation. It is considered to be related to a particular society or region, developed non-systematically and continuously in response to a changing environment (Dana, 2007). Various factors affect the preservation of crafts. Many studies have identified separate factors that require specific approaches to overcome issues related to heritage craft preservation. Among the issues receiving attention are individual obstacles, such as lack of training opportunities, problems of inheritance and intergenerational transmission among aging practitioners, loss of skills, particularly following the introduction of new technologies, market limitations including demand for products, supply of raw materials, and small-business challenges including the high costs of business premises and workshops (Ariffin et al., 2023; Shafi et al., 2021). These studies demonstrate that the sustainability of traditional crafts is affected by interconnected cultural, production, market, and institutional factors. However, these factors are frequently discussed individually, making it difficult to understand how they operate together within the commercialisation process.

Innovation can make a traditional handmade product unique and provide a vital attraction factor compared to factory-made items. It can be a factor in the durability of traditional handicraft products in the current market (Shafi et al., 2022). The combination of contemporary innovation and traditional values in handicrafts is also seen as contributing to the preservation of a craft product. However, existing studies tend to examine innovation, digitalisation, market development and institutional support as separate dimensions, providing limited understanding of how these elements interact in the commercialisation of Malaysian *Batik* and *Songket* from the perspectives of multiple stakeholders. The combination of contemporary innovation and traditional values in handicrafts is also seen as contributing to the preservation of a craft product. In the case of woven cloth in Sri Lanka, innovation is important to ensure that the craft industry remains competitive. Traditional weaving that combines contemporary needs with the latest design is seen to be able to meet consumer needs, thus indirectly creating fierce competition with factory-made

products. Collaboration between designers and weavers indirectly attracts more people to work on weaving, ultimately bringing good to the country (Wanniarachchi et al., 2022). The difficulty of obtaining raw materials is also a factor that can inhibit the potential of traditional handicrafts, so innovation using alternative materials can solve this issue. The problem of getting materials for traditional handicrafts makes handicraft craftsmen more creative by using plastic to replace traditional materials. Innovation with the use of alternative materials is seen to deal with the problem of lack of raw materials, adapt handicrafts to modern lifestyles, and meet the needs of the market while maintaining the identity of handicrafts (Angat & Hassan, 2023). Nevertheless, innovation in heritage crafts involves more than improving market attractiveness. Changes in motifs, materials, techniques, and production technology may also affect how cultural meanings, traditional knowledge, and authenticity are interpreted. Therefore, innovation should be considered in relation to both commercial relevance and cultural continuity rather than assuming that all forms of innovation automatically contribute to heritage preservation. Cultural sustainability encompasses the processes, values, and practices that allow cultural expressions to survive, develop, and remain relevant across generations while maintaining their distinctive identity (Soini & Birkeland, 2014). In heritage crafts like *Batik* and *Songket*, cultural sustainability must ensure that the knowledge, skills, and aesthetic values embedded in these crafts are preserved and adapted to the contemporary context. This effort requires the intervention of various elements, including education, innovation, and commercial viability.

In this context, commercialisation in the craft sector may provide a practical and strategic opportunity to support the sustainability of traditional crafts in the modern world. However, commercialisation does not automatically result in cultural sustainability, and any steps taken need to consider traditional characteristics, cultural meanings, local wisdom, and the agency of craft practitioners. When digitalisation and innovation elements are introduced with cultural values in mind, they can increase the craft's marketability and elevate the symbolic value of a traditional craft product (Lahdesmaki et al., 2020). For this reason, strong government policies, community-based initiatives, and artisan-driven innovation are the main catalysts for this ecosystem. Cooperation by all parties in providing material and symbolic support to ensure that cultural expressions continue to exist in an increasingly competitive market (Crooke, 2020). Institutional support is therefore relevant not only in providing financial assistance or marketing opportunities but also in facilitating training, digital capabilities, product development, and the transmission of craft knowledge. At the same time, the role of artisans should not be treated as secondary to institutional intervention. Their participation and agency in deciding how designs, techniques, materials, and cultural meanings are adapted are important considerations in determining

whether commercialisation supports cultural sustainability.

Heritage sustainability can only be achieved when preserved, continuously practiced, and relevant to today's society. In this regard, guided by the Cultural Sustainability Framework (CSF), this study examines how well-planned commercialisation strategies can function as a mechanism that potentially supports economic viability and the sustainability of cultural heritage. This approach considers how providing artisans with market access, training, and innovation tools may strengthen the resilience of traditional knowledge and help intangible heritage remain a dynamic element of national identity and community development. In the context of traditional Malaysian crafts, challenges include a lack of youth engagement, declining demand in the local market, and limited exposure to global markets. However, strategic commercialisation, community engagement, and government policy interventions can enhance the resilience of this cultural practice.

Thus, the CSF helps to conceptualise how socio-economic strategies such as digital marketing, government training programmes, and artisan-driven innovation are not simply economic interventions but may serve as mechanisms supporting the long-term viability of cultural knowledge and identity. In this study, the framework is applied through five interrelated dimensions: (i) continuity of cultural practices, (ii) transmission of knowledge and skills across generations, (iii) maintenance of cultural identity and meaning, (iv) adaptation and continued relevance in changing contexts, and (v) socio-economic viability supported by participation and artisan agency. Despite growing research on traditional craft preservation, digitalisation, innovation, and market development, three gaps remain particularly relevant to this study. First, limited attention has been given to how commercialisation, digitalisation, innovation, and institutional support interact rather than operate as separate strategies. Second, existing discussions provide limited multi-stakeholder evidence that incorporates the perspectives of artisans, entrepreneurs, and supporting institutions within the same analysis. Third, comparatively little attention has been given to the shared and craft-specific commercialisation experiences of Malaysian *Batik* and *Songket*. This study addresses these gaps by using the Cultural Sustainability Framework as an analytical lens to examine multi-stakeholder evidence from the Malaysian *Batik* and *Songket* sectors. Rather than treating commercialisation as inherently beneficial or harmful to cultural heritage, the study considers whether and under what conditions commercialisation practices contribute to cultural continuity, knowledge and skills transmission, cultural meaning, adaptation, socio-economic viability, and artisan agency. Accordingly, commercialisation is understood as creating potential conditions for cultural sustainability when market access, digitalisation, innovation, institutional support, and artisan participation remain aligned with the cultural foundations of the crafts.

METHODS

This qualitative study assessed traditional craft products' commercialisation strategies to sustain *Batik* and *Songket*'s heritage. It took the views of individuals and agencies involved in the making and commercialising of these crafts.

Data Collection and Analysis

The qualitative research approach offers an effective way to understand the meanings and experiences of people in their social lives (Fossey et al., 2002) through direct interaction with participants in their natural environments (Creswell, 2014). A qualitative case-study approach was used to examine the commercialisation of Malaysian *Batik* and *Songket* from the perspectives of stakeholders directly involved in these craft sectors. The case was bounded by its focus on the commercialisation and sustainability of *Batik* and *Songket* within the Malaysian craft sector. The participants represented craft practitioners, entrepreneurs, training and supporting organisations, and government-related craft institutions, including stakeholders from Terengganu, Johor, and Perak, as well as representatives of relevant national and non-governmental craft organisations. *Batik* and *Songket* were included within the same case because both represent established Malaysian textile crafts that combine tangible products with culturally embedded knowledge, skills, techniques, and aesthetic values. Examining both crafts also allowed the study to identify shared commercialisation practices as well as craft-specific challenges and forms of support. This case study involved 12 informants who were purposively selected based on their knowledge, participation, and familiarity with the *Batik* and *Songket* craft industries. The participants included a small-scale *Songket* weaver, *Batik* entrepreneurs, officers from the Malaysian Handicraft Development Corporation, officers from Yayasan Tuanku Nur Zahirah (YTNZ), a *Songket* weaving trainer, and an officer from the National Craft Institute (IKN), as shown in Table 1. The inclusion criteria required participants to have direct involvement in, professional responsibility for, or substantial knowledge of *Batik* or *Songket* production, commercialisation, training, development, or institutional support. This selection enabled the study to obtain perspectives from both craft practitioners and organisations involved in supporting the craft sector.

Among those involved in this study were *Songket* weavers, *Batik* painters, individuals involved in sales, and representatives of government institutions involved in commercialising these craft products. Initial information was provided to the informants involved, particularly regarding the objectives and scope of the study, so that the informants better understood the direction of the interview session. In-depth interviews were conducted with 12 informants. The interview questions explored the participants' perceptions of the commercialisation strategies implemented in the *Batik* and *Songket* craft sectors. The interviews included questions concerning participants' commercialisation efforts, the

Table 1
Information of the informants

No.	Code	Description
1.	I1	Malaysian Handicraft Officer Terengganu branch
2.	I2	Malaysian Handicraft Officer Terengganu branch
3.	I3	Small-scale *Songket* weaver
4.	I4	Malaysian Handicraft Officer Johor branch
5.	I5	Malaysian Handicraft Officer Johor branch
6.	I6	*Batik* entrepreneur
7.	I7	Tuanku Nur Zahirah Foundation (YTNZ) Officer/ *Songket* weaving trainer
8.	I8	Malaysian Handicraft Officer Perak branch
9.	I9	National Craft Institute (IKN) Officer
10.	I10	Malaysian Handicraft Officer Terengganu branch
11.	I11	Tuanku Nur Zahirah Foundation (YTNZ) Officer
12.	I12	*Batik* entrepreneur

Source: Authors' own work

support available to assist these efforts, obstacles and challenges encountered, and the potential for strengthening the commercialisation and sustainability of *Batik* and *Songket*. The interviews lasted between 30 and 45 minutes, and all personal information about the informants was kept confidential.

The informants involved in this study were selected based on their knowledge, participation, and familiarity with the *Batik* and *Songket* craft industries. The audio-recorded interviews were transcribed verbatim and analysed using thematic analysis. Thematic analysis provides an effective approach for identifying, analysing, and reporting patterns within qualitative data (Alhojailan, 2012; Thorne, 2000). The analysis involved familiarisation with the interview transcripts, identification of relevant segments of data, coding of recurring ideas, comparison of codes across participants, and organisation of related codes into broader themes corresponding to the study objectives and research questions. Themes were then reviewed in relation to the interview data before being interpreted in the context of *Batik* and *Songket* commercialisation and cultural sustainability. To strengthen the credibility and trustworthiness of the findings, source triangulation was employed by comparing information obtained from participants occupying different roles within the craft sector. This allowed the researchers to examine similarities and differences across stakeholder perspectives and reduce dependence on a single source of evidence (Marlina et al., 2024). Reliability and trustworthiness were established through interview transcripts, field notes, and a carefully documented coding scheme.

Data saturation was also considered during the analysis. Saturation was understood as the point at which additional interviews no longer generated substantially

new themes relevant to the study objectives. By the 12th interview, similar patterns and responses were recurring across the data, indicating thematic saturation within the scope of the participant groups included in this study. The claim of saturation is therefore limited to the themes generated within this specific qualitative sample and should not be interpreted as representing all *Batik* and *Songket* practitioners or institutions in Malaysia. Throughout the analysis, attention was given to maintaining consistency between the participants' accounts, the coding process, and the interpretation of the findings. Interpretations were compared against the original interview transcripts to ensure that the reported themes remained grounded in participants' accounts.

RESULTS AND DISCUSSION

Commercialisation of *Batik* and *Songket*

Preservation of traditional handicrafts among the community requires a more strategic approach, primarily through planned commercialisation efforts, so that it can contribute to the socio-economic progress of the local community. To face the risks and challenges of the extinction of handicraft heritage, which is the identity and reflection of local communities, every step-in commercialisation efforts must be sensitive to various complex factors that are obstacles to the preservation of crafts. In the context of textile craft heritage, such as *Batik* and *Songket*, using less attractive colors, not contemporary motifs, and using products no longer relevant in the current world are significant obstacles. These factors cause traditional handicrafts to be less popular and less used by the community, especially the young. So, to overcome this problem, commercialisation must consider several aspects such as innovation, digitalisation, and agency involvement to ensure that this effort is successful. This study explored how commercialisation has been implemented in the local traditional craft industry. The findings identified three closely related strategies digitalisation, government and institutional support, and artisan-led innovation while artisan agency cuts across these strategies by shaping how commercialisation and adaptation are undertaken. These findings describe the commercialisation practices and support mechanisms identified by participants. They should not be interpreted as evidence that these strategies necessarily increase income, sales, or international competitiveness, as the study did not collect quantitative market-performance data.

Figure 1 summarises the analytical relationship identified in the findings. Digitalisation of products facilitates alternative channels for market access; Government support provides training, infrastructure, marketing assistance, and opportunities for skills development; and Craftsmen's innovation enables products and production practices to respond to changing contexts. Craftsmen remain important factors in determining how cultural knowledge, designs, techniques, and products are adapted. These mechanisms may create conditions that support cultural sustainability, but the relationship is not assumed to be automatic.

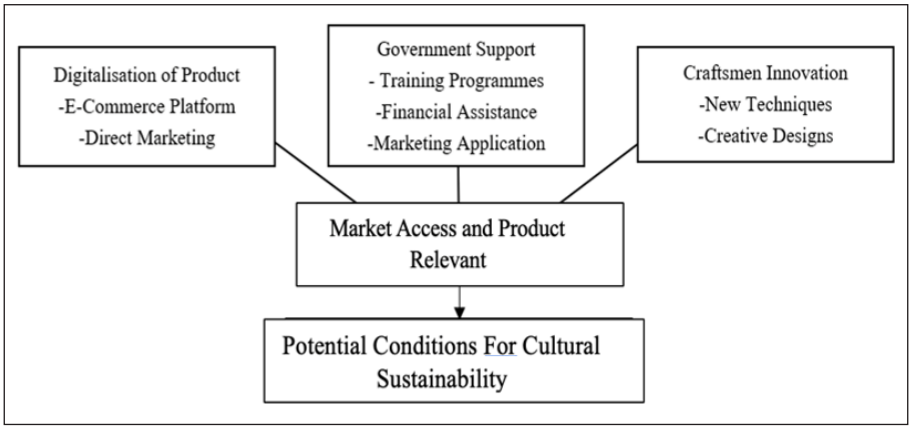

Figure 1. Traditional craft commercialisation for cultural heritage sustainability
Source: Authors' own work

Digitalisation of Product

The digital revolution has driven the advancement of communication by opening new opportunities and increasing the efficiency of digital services, thus bridging social interactions and expanding global networks. This development has also facilitated the search and sharing of information, impacting various sectors, including cultural heritage (Chai-Arayalert et al., 2020). Digitisation opens up new spaces for preserving and promoting traditional crafts as cultural heritage and encourages optimal community engagement to ensure sustainability and expand heritage promotion platforms. In the business context, digitalisation helps entrepreneurs cope with uncertainty and build confidence in the future (Nambisan, 2017). Entrepreneurs and craftsmen are now using digital approaches as a marketing alternative, especially after the challenges of the COVID-19 pandemic. However, several key issues, such as intermediaries, low levels of digital literacy, and the need for more effective marketing strategies, still need to be addressed.

The findings identified intermediaries as one concern in the commercialisation of craft products. In the case of the small-scale *Songket* weaver interviewed, the participant perceived the payment received for weaving as low in relation to the workload and linked the difficulty of obtaining a higher payment to problems in product sales. The existence of intermediaries in this business will affect the cost of making craft products, which ultimately causes the price of craft products to be high due to price manipulation set by intermediaries. So, the wage rate for producing craft products is also affected. According to informants hired as *Songket* weavers on a small scale, the wage rate for producing a piece of *Songket* is low compared to the workload they have to face.

> I received a salary of RM1000 to produce this *Songket*. This salary has been going on for 20 years and has never increased. Other workers

> have also had their salaries increased. However, my friends and I who are paid to weave this *Songket*, our salaries have never changed. If I ask for a salary increase, they will refuse because there is a problem with sales. So, they cannot increase their salaries.
>
> (I3, T1)

This account indicates that the participant receives RM1,000 for each completed piece of *Songket* rather than as a monthly salary. Producing a high-quality piece of *Songket* may take approximately three to four weeks, reflecting the labour-intensive and time-consuming nature of traditional *Songket* weaving. Despite the specialised skills and substantial production time required, the participants reported that the payment rate for a completed piece had remained unchanged for many years. However, there are also a few small-scale *Songket* weavers who prefer to sell their products to intermediaries because they do not dare to bear the risk of loss and do not have the time and convenience of channels to sell directly to customers even though they know the market price is much higher than the price sold to the public. This finding highlights an important commercialisation challenge specific to *Songket* where the economic value assigned to skilled craft labour may not necessarily correspond with the time, effort, and specialised knowledge required for production. The participant also associated the difficulty of increasing the weaving payment with limitations in product sales. This suggests that the sustainability of *Songket* involves not only expanding market access but also ensuring the economic viability of skilled weaving as a livelihood.

Therefore, in addressing this issue, the digitisation of handicraft products, including *Songket* weaving, can also provide an opportunity for craft entrepreneurs to market their goods according to market prices. Customers also have optimal purchasing power when comparing prices offered by sellers more quickly and widely. Craft entrepreneurs can expand the marketing and sales of their products to new markets through this method. In digitising the process of marketing products, craft makers are not alone because, in this regard, the role and support of the government are very helpful. The government is paying due attention to this issue and seriously considering digitalisation in the craft industry.

Government Support- Marketing Application, Training Programmes and Financial Assistance

In terms of traditional handicraft marketing, Kraftangan Malaysia assists handicraft entrepreneurs in further expanding the handicraft market through its digital platforms. Among these platforms are MyCraftShoppe, E-Kraf Bazar, and the CraftOnTheGo smartphone application. Efforts are being made through the Malaysian Craft Development Corporation (Kraftangan Malaysia), which has taken the initiative to strengthen digital programmes in the development plan for the Malaysian craft industry. The initiative developed focuses on the needs and convenience of entrepreneurs

and considers the comfort and interests of local craft buyers and enthusiasts.

Studies have found that most craft entrepreneurs need help managing and finding markets for their craft products. Traditional craft entrepreneurs and artisans, especially in textiles such as *Batik* and *Songket*, must explore the right marketing strategies to compete with many other industry products. Therefore, skills and knowledge of basic information technology knowledge are the foundation for ensuring marketing strategies, especially those involving digitalisation. The government is also sensitive to literacy efforts in managing digital marketing methods by involving basic applications and software in digital marketing. Therefore, several initiatives have been taken to overcome this, such as providing digital marketing platforms, training and exposure to IT skills for entrepreneurs, and other support services to improve the quality of online product advertising.

> Another thing, our entrepreneurs who live in rural areas are not IT literate, which is a challenge for us; the product needs to be exposed to the public to market it. A few do not know what Facebook is, so we need to teach them the basics before introducing them to digitalise their product marketing.
>
> (I4, T1)

This account indicates that providing digital platforms alone may not be sufficient. Digital literacy and practical training are also necessary if craft entrepreneurs are to make use of these platforms effectively. Craft entrepreneurs are also helping to improve the quality of advertising with expertise in IT to help entrepreneurs produce quality product advertisements.

> We will teach you to take pictures and enter information into the system. Our staff will come in and create attractive advertisements. They must ensure that the goods are available and ready to be posted to customers.
>
> (I5, T1)

The government's determination to ensure that digital marketing strategies are implemented well has provided an opportunity for a surge in digital culture in the craft industry and helped many craft entrepreneurs. Registered Malaysian Craft Entrepreneurs receive special privileges and attention in product marketing.

> The promotional unit makes the entrepreneur's product not sloppy; we don't tell the entrepreneur to take pictures if the pictures meet the standards; we have our studio where there is lighting to help with this, the product is more attractive.
>
> (I1, T1)

In addition to providing e-commerce platforms, digitalisation efforts therefore include product photography assistance, uploading information to digital platforms, and technical support. These forms of assistance may reduce some of the digital-marketing barriers faced by craft entrepreneurs and improve their ability to

present products through online channels. Among the important initiatives is the CraftOnTheGo application, which allows users to access complete information about craft entrepreneurs, such as product types, photos, locations, and social media. This application connects users directly to entrepreneurs without intermediaries, thus helping maintain quality and affordable prices. Figure 2 illustrates digital platforms that support the online promotion and marketing of traditional Malaysian crafts, including MyCraftShoppe and E-Kraf Bazar.

This application not only lists handicraft entrepreneurs but also provides a directory of Kraf Malaysia branches, email information, social media links (Instagram, YouTube), the Kraf Malaysia portal, the National Craft Institute (IKN), as well as access to MyCraftShoppe for online sales. New entrepreneurs can also register with Kraf Malaysia through this application, making it easier for them to receive initiative information and get involved in the digitalisation of handicraft businesses. This application helps users find products quickly and supports entrepreneurs through a complete product gallery display. Meanwhile, E-Kraf Bazar is an online bazaar via a Facebook Group that was created on 8 April 2020 during the Covid-19 pandemic. It is attended by more than 18,000 members, including entrepreneurs, buyers, and craft enthusiasts, allowing for buying and selling activities, interaction, and live viewing of the craft-making process, thus expanding the market reach of entrepreneurs.

The government has implemented various initiatives to strengthen the heritage of handicrafts, such as exhibitions, design competitions, training courses, financial assistance, and marketing support. These efforts open up opportunities for youth to venture into traditional craft enterprises. Through programmes such as National Craft Day and statecraft festivals, the marketing of handicrafts can be expanded, tourists can be attracted, and the socio-economic status of local communities can be improved. Handicrafts also have potential as a tourism product because they better reflect local cultural values than other souvenirs. High demand for craft products ensures the industry's survival, creates job opportunities, and expands businesses in both urban and

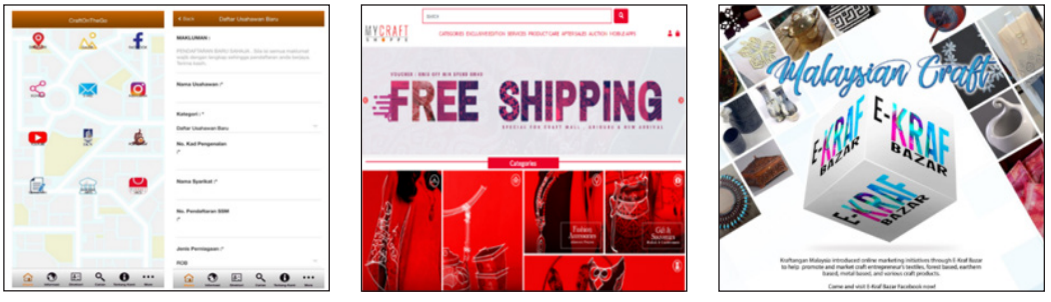

Figure 2. Display of the CraftOnTheGo, MyCraftShoppe and E-Craft Bazaar websites

rural areas. Government support was not limited to marketing. Participants also described programmemes intended to develop new practitioners and transfer craft skills, which is particularly relevant to the intergenerational continuity dimension of cultural sustainability.

> We aid with young entrepreneurs; they don't have capital (yet), so we will provide an incubator for them to use it for six months for free; they need to pay for utilities and materials only
>
> (I10, I1)

> In 'Craft Attachment Programme', we attach anyone who is interested in joining the craft making with a craft entrepreneur, and they will have the training and get allowance for 6 months. We do this to encourage youth to be involved in craft heritage.
>
> (I5, I1)

These programmes illustrate two functions of institutional support. The first concerns the commercial viability of new craft entrepreneurs through access to facilities, training, and business support. The second concerns cultural continuity through opportunities for new practitioners, including younger people, to learn craft skills from experienced practitioners. Malaysian Crafts has designed and implemented various initiatives to help craft entrepreneurs and encourage those who want to enter this field. In addition to the incubator, Malaysian Crafts also provides a Craft Apprentice programme where those interested in joining the craft industry will be placed under the care of experienced craft entrepreneurs for six months. This mentor-based programme targets guidance and training for entrepreneurs who are just starting in the craft field. Malaysian Crafts will provide them with a training allowance throughout the programme. This programme targets youth who are interested in the handicraft field. In addition to assistance in the form of skills training, Malaysian Crafts also provides workshop and machine repair assistance to entrepreneurs in need on a 'one-off' basis. This kind of assistance is important for handicraft entrepreneurs; craft workshops must be comfortable to ensure safety while working. The steps taken by the government show a strong commitment to making traditional handicrafts suitable for today's contemporary times so that they remain relevant and able to face the challenges of the current world. In addition, handicraft entrepreneurs and those involved in this industry can no longer remain stagnant by closing all doors to innovation because today's demands of the market, lifestyle, and economy always demand change.

Craftsmen Innovation- New Techniques and Creative Designs

In addition to product empowerment through digitalisation, innovation also plays an important role as a potential approach to ensure the preservation of handicraft heritage. Innovation can occur in various aspects of handicrafts, including manufacturing, design, and marketing

strategies. Innovation implemented in traditional handicrafts is a proactive step to address the extinction factors facing handicrafts. Handicraft production is now greatly influenced by modern technology that has been introduced to increase the production of handicraft products compared to using hands. Crafts that reflect local culture and heritage can increase tourism development and socio-economic status, and entrepreneurs can play an important role in developing the handicraft industry (Hasliza, 2017).

Studies on the relationship and influence of innovation in the handicraft sector have been conducted for a long time. Studies have found that innovation triggered by the presence of technology in traditional crafts is an important meeting point where tradition and modernity merge. Among the reasons why innovation is needed in the handicraft industry is that production costs can be reduced, handling can be simplified, and manufacturing time can be shortened. Incorporating digital tools can increase accuracy, speed up production, diversify craft products, and foster collaboration among craftsmen. The collaboration of innovation, technology, and traditional skills can enrich the craft-making process and ensure the sustainability and continued relevance of traditional crafts in a technology-driven world. Based on the study findings summarised in Table 2, *Batik* and *Songket* textile crafts are still catching up in facing the innovation phase to continue competing with other products. Some of the innovations identified in this study are categorised into hybrids, motifs, techniques, materials, and uses. Innovations are seen as new motif renewal in *Batik* textile patterns, the mixture of modern motifs in *Songket* weaving, the color-blocking *Batik's* making process, and modern technology to speed up the *Songket* weaving process.

Based on the study findings summarised in Table 2, several forms of innovation were identified in *Batik* and *Songket*. These included motif innovation in *Batik*, the integration of contemporary motifs

Table 2
Identified innovations in batik and songket textile crafts

Type of Innovation	Description	Purpose/Impact
Motif Innovation	Renewal of new motifs in *Batik* textile patterns	Respond to contemporary aesthetic preferences while retaining culturally recognisable elements
Hybrid Motif	Integration of modern motifs into traditional Terengganu *Songket* weaving	To maintain cultural relevance while appealing to younger and global markets
Technical Innovation	Use of colour-blocking technique in *Batik* making	To introduce contemporary visual effects and diversify design options
Technological Innovation	Adoption of modern technology (e.g. automated looms) in *Songket* weaving	To reduce production time, labour intensity, and operational costs

Source: Authors' own work

in *Songket*, technical innovation in *Batik* production, and technological adaptation in *Songket* weaving. Table 2 also demonstrates that innovation does not occur exactly the same way across the two crafts. The *Batik* findings emphasise experimentation with motifs, materials, colour, and blocking techniques, whereas the *Songket* findings emphasise motif adaptation and changes associated with the weaving process. This distinction is important because the commercialisation and innovation requirements of the two crafts should not be treated as identical. Motifs are one of the things that craftsmen pay attention to and innovate. Malaysian *Batik* motifs are always loaded with meaning and philosophy, often related to the beliefs and traditions of Malaysian society. The main inspiration for traditional motifs lies in the elements of flora and nature, which are abundant in traditional Malaysian handicrafts (Abdullah & Samin, 2020; Kamarudin et al., 2021). Studies show a tendency to maintain natural elements in new motifs that continue to be produced by *Batik* entrepreneurs. Many natural elements are integrated and updated according to current needs and trends. For example, elements such as pineapple and black pepper in *Batik* patterns and local cultural arts such as Ghazal are introduced as motifs.

Hybrid innovation in the Malaysian handicraft industry can be seen through the creative approach of *Batik* entrepreneurs who integrate the 'Shibori tie dye' technique from Japan with local *Batik* stamp motifs. This Shibori tie-dye technique originated in Japan and involves tying and dyeing textiles to create unique motifs. The uniqueness and artistry of *Batik* resulting from this combination of techniques is an added value to *Batik* craft, especially in attracting the younger generation to wear *Batik*. As illustrated in Figure 3, this hybrid innovation demonstrates how traditional *Batik* craftsmanship can be enhanced by combining Japanese Shibori techniques with local *Batik* motifs.

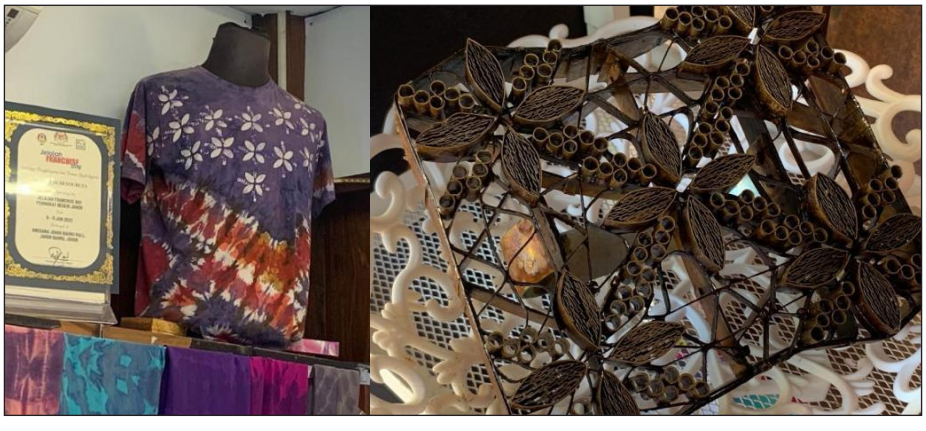

Figure 3. Batik crafts produced with a combination of tie die shibori techniques. (right picture: blocks used in the production of *Batik* with the new motifs)
Source: Authors' own work

The innovation of motifs in *Batik* and *Songket* have is important in promoting local cultural identity and strengthening the position of traditional handicrafts as a symbol of national heritage. Introducing new motifs is not to replace traditional motifs' uniqueness but to add value and enhance aesthetic appeal. *Batik* motifs are often inspired by flora and natural elements that are laden with meaning and philosophy closely related to community beliefs (Abdullah & Samin, 2020; Hussin, 2012; Kamarudin et al., 2021), and this element is still maintained in several new motifs. For *Songket*, especially in Terengganu, entrepreneurs have introduced modern and contemporary motifs that combine traditional elements, making *Songket* still relevant to current fashion while maintaining its cultural value. This innovation is important to ensure that the appeal of this textile art continues to remain among the younger generation and thus ensure the continuity of this heritage.

Innovation through technical and technological means is also one initiative of craftsmen to ensure that their craft products remain viable in the market. Changes in manufacturing methods, designs, and materials used to produce handicrafts need to be made according to the times so that handicraft entrepreneurs are no longer stuck in the same old rut. At the same time, it can simplify and speed up the process of producing handicrafts and increase quantity and quality to meet market demand. Innovation in function or use involves changing the function of crafts.

In *Batik* crafts, for example, *Batik* blocks, which are synonymous with their function in making *Batik*, are now used as decorative crafts. In addition to changing their function, making *Batik* blocks also experience changes in the materials used; instead of using copper entirely, a mixture of zinc and yellow copper sheets is now used to produce *Batik* blocks. In addition to preserving them, the innovation has given value to *Batik* blocks, which can now be kept by *Batik* makers and used by others as home decorations. This existing innovation, whether in the form of use, technique, or raw materials, is intended to preserve the sustainability of handicrafts. It prevents them from getting lost until they are considered modern.

> We recently made an innovation in clay blocking. That's one of the innovations we made. The effect is really beautiful, because clay *Batik* has an artistic effect.
>
> (I9, T1)

> We want a material that is cheap and easy for people to make, the clay one, the block *Batik* one uses wax to stamp on the cloth, so we use clay to stamp, it looks like it when blocking the color, its function is the same as wax, if wax has gone up in price, the stove, you need gas, so to stamp cloth, you need to look at the temperature, mix the clay and stamp.
>
> (I1, T1)

These show that innovation can be motivated by practical considerations such as

material cost and ease of production, as well as by aesthetic experimentation. The findings do not establish that such innovations necessarily preserve or damage authenticity. Instead, they show that practitioners and supporting institutions negotiate adaptation while retaining elements of established craft knowledge and practice. The findings suggest that existing innovations may allow certain traditional aesthetic values and craft skills to be maintained while accommodating contemporary adaptations. Such innovations may add aesthetic value, respond to contemporary preferences, and simplify aspects of the production process while retaining elements of traditional skills and techniques. However, the findings do not establish that innovation has no effect on authenticity or originality, as these aspects were not directly evaluated in this study. The relationship between innovation and authenticity should therefore be understood as conditional, depending on how new designs, materials, and techniques are negotiated while maintaining the craft's culturally meaningful elements.

Batik and *Songket* Comparison

Although *Batik* and *Songket* share several commercialisation challenges, the findings indicate meaningful differences between the two crafts. Both require market access, institutional support, skills development, and adaptation to changing consumer preferences. However, the form these requirements take differs according to their production characteristics. For *Batik*, the findings show greater emphasis on design and material experimentation. Innovation includes new motifs, colour-blocking, combinations with other textile techniques, alternative materials such as clay, and changes to the materials and uses of *Batik* blocks. This suggests relatively broad opportunities for product and technique adaptation. For *Songket*, the findings place greater emphasis on specialised weaving skills, labour requirements, remuneration, skills transmission, and adaptations to motifs and weaving technology. The account of the small-scale *Songket* weaver also highlights the relationship between skilled labour, intermediaries, and commercial arrangements. Institutional and digital support are relevant to both crafts, but their support requirements may therefore differ. *Batik* practitioners may particularly benefit from design development, product presentation, digital marketing, and material or technical experimentation, whereas *Songket* sustainability also requires attention to specialised weaving skills, production time, knowledge transmission, and the viability of skilled craft labour. The comparison demonstrates why *Batik* and *Songket* can be analysed together without treating them as a homogeneous craft category. Their shared position as Malaysian textile heritage enables identification of common commercialisation strategies, while their different production processes reveal craft-specific challenges and support requirements.

Integrating the Findings Through the Cultural Sustainability Framework

The findings are interpreted through the Cultural Sustainability Framework to explain how the commercialisation of *Batik* and *Songket* relates to the continuity of traditional craft practices. The framework views culture not only as heritage to be preserved but as a dynamic system sustained through relationships, identity, adaptation, and transmission between generations (Dessein et al., 2021; Soini & Dessein, 2016). The sustainability of traditional crafts such as *Batik* and *Songket* depends on their ability to adapt, remain meaningful to local communities, and contribute to socio-economic resilience. The Cultural Sustainability Framework (Dessein et al., 2015; Soini & Birkeland, 2014) is used to emphasise the intrinsic value of cultural heritage and its function in sustainable development. Cultural sustainability focuses on maintaining cultural practices, expressions, and identities across generations. In this study, *Batik* and *Songket* are positioned not only as economic products but also as cultural expressions that carry symbolic, historical, and societal meanings. In this context, cultural sustainability also requires attention to community ownership and artisan control over the cultural knowledge, motifs, and skills associated with *Batik* and *Songket*. Intellectual property protection may therefore be important in commercialisation to safeguard culturally significant designs and knowledge while ensuring that artisans and communities retain recognition and agency over their heritage. It is essential for traditional crafts to survive in the face of modernisation and globalisation, they must remain meaningful to society, adapt to changing contexts, and be able to attract younger generations. Therefore, commercialisation may support cultural sustainability by improving market access, encouraging adaptation, supporting skills transmission, and maintaining the relevance of *Batik* and *Songket*. However, these benefits are not automatic, as commercialisation may also create tensions relating to authenticity, artisan control, and the valuation of traditional knowledge and skilled labour. Its contribution to cultural sustainability therefore depends on how commercial practices are balanced with cultural continuity, artisan agency, and the intergenerational transmission of knowledge and skills.

CONCLUSION

These findings therefore do not suggest that commercialisation is inherently beneficial or harmful to the authenticity of *Batik* and *Songket*. Instead, commercialisation may create conditions for cultural sustainability when innovation, digitalisation, and institutional support remain connected to cultural meaning, skills transmission, and artisan participation. Conversely, commercial adaptation that prioritises marketability without attention to these cultural dimensions may not necessarily support long-term cultural sustainability. These traditional crafts reflect the community's heritage, increasing economic potential while preserving the skills and

knowledge of generations amid modern lifestyles. This heritage carries the local community's identity and the cultural values of a society that need to be passed down to the younger generation, not just traditional skills and knowledge, but also continuing the identity and wisdom of previous generations. Therefore, the preservation of intangible cultural heritage is important to ensure the continuity of heritage craft forms such as *Batik* and *Songket*. Like other intangible heritage items, these two crafts depend on transferring skills and knowledge from generation to generation to remain relevant in modernity. Efforts to preserve traditional crafts must consistently protect cultural heritage by ensuring that craft skills continue to be passed down.

To maintain the creation and appreciation of *Batik* and *Songket* crafts, strategic initiatives must be implemented in the community, focusing on fostering craftsmanship skills and innovation in various forms. Research findings show that the success of commercialising *Batik* and *Songket* depends on the integration of digital technology and creative innovation. Craft entrepreneurs must embrace technological advances in the ever-evolving industry to ensure this tradition remains sustainable. However, this evolution largely depends on two main factors: the government's active involvement and the artisans' commitment. In addition, the awareness of the wider community and their role as consumers plays a supporting role in promoting and maintaining craft heritage. When supported by government support and artist engagement, the synergy between innovation and digitalisation increases production capabilities and helps traditional crafts remain relevant in today's market.

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Development of Environmental Resources Management Model Among Community Settlements Along Terengganu River Basin and Kenyir Lake, Terengganu, Malaysia

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ABSTRACT

The sustainability of natural resources is vital for global well-being. Environmental awareness involves understanding the environment's importance. Strategies like Environmental Planning and Management (EPM) have been developed to address environmental degradation. However, development pressures have increased resource exploitation. Therefore, community awareness and involvement are key to ensuring sustainable resource management. This study aims to develop an Environmental Resource Management Model (ERMM) based on the level of Knowledge, Practice, and Attitude of local communities. The study involved 380 respondents from local community settlements along the Terengganu River Basin and Kenyir Lake. Primary data were collected through a structured questionnaire, and the data were analysed using appropriate chemometric techniques to identify patterns and relationships among KAP variables. The development of the Environmental Resource Management Model (ERMM) integrated the results of statistical analyses with Geographic Information System (GIS)-based spatial modelling using Inverse Distance Weighted (IDW) interpolation. The ERMM was created based on three sub-models: Model A: Guidance from those responsible for environmental management; Model B: The

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development of an environmental resource management system; and Model C: Innovation of the existing environmental resource management system. The proposed ERMM provides an integrated framework that connects community-based KAP evidence with spatial information to support more targeted and sustainable environmental resource management. The ERMM has produced a valuable model as a policymaking tool for both governments in rural areas. The sustainable policymaking tool will preserve the wealth of natural resources.

Keywords: Environmental awareness, environmental planning and management (EPM), environmental resource management model (ERMM), geographic information systems (GIS), inverse distance weighted (IDW)

INTRODUCTION

Rural communities in Malaysia continue to face various environmental challenges, including natural resource exploitation and environmental degradation. The degradation of natural resources is primarily driven by anthropogenic activities, especially along the river basin. These activities disrupt ecological balance and adversely affect the sustainability of natural ecosystems. According to Baging et al. (2020), Kumari et al. (2023) and Santika et al. (2019), it has become a critical issue of growing concern because of environmental degradation. The increased anthropogenic activities surrounding rural communities have increased the pollution and contamination of surface and groundwater with harmful pollutants like heavy metals, pesticides and fertilisers, industrial chemicals, and organic waste, as well as contamination of soil by oil spills and leaks in river water.

The conservation of forest ecosystems is also severely impacted by anthropogenic activities and climate change, as noted by Rasul et al. (2015) and Razali et al. (2018). This issue is particularly relevant to the Terengganu River Basin and Kenyir Lake, which represent important socio-ecological systems in Malaysia. The Terengganu River Basin supports local communities and diverse ecosystems, while Kenyir Lake, surrounded by extensive tropical forest and a major hydroelectric reservoir, provides important ecological, economic, and social benefits to surrounding communities. However, increasing ecotourism activities, agricultural expansion and associated runoff, resource extraction, and hydroelectric development have created localised pressures on natural resources and ecosystem sustainability in these areas. Population expansion and unlimited development activities will cause changes in resource use. The community's settlements, the unbounded evolution of natural resources, and human activities all affect how resources are used. Numerous disputes over land usage, harvesting forest products, and the distribution of resources among villages will result from the overexploitation of natural resources (Alam et al., 2017). Some members of indigenous groups or outsiders engage in timber product trading without following community-accepted guidelines for responsible natural resource use. Natural forest fragmentation

and significant anthropogenic regeneration are predicted outcomes of the rapid growth of these rural communities into protected areas. Degradation of ecological services obtained from the sustainability of forest ecosystems, as well as additional deterioration of biodiversity, fauna's habitat, and forest structure of essential natural tropical forest resources (Liu et al., 2019; Wahab et al., 2023). In the Terengganu River Basin and Kenyir Lake, these localised pressures further highlight the importance of strengthening community knowledge, attitudes, and practices in environmental resource management to support the long-term sustainability of the area's interconnected forest and aquatic ecosystems.

The development, structure, and operation of human civilisation, the environment, and socioeconomics will all suffer from a few aspects of soil and natural resource degradation. Compaction, loss of soil structure, nutrient deterioration, erosion, sedimentation, and soil salinity are a few consequences. As illustrated in Figure 1, soil degradation represents an important pathway of environmental deterioration in the Terengganu River Basin. Land-use changes, deforestation, and unsustainable development activities may accelerate soil erosion and increase sediment transport into river systems. These processes can contribute to riverbank erosion and sediment accumulation downstream, potentially leading to lake siltation and deterioration of aquatic ecosystems, including the Kenyir Lake area. Therefore, soil degradation should not be viewed in isolation but as part of a broader interconnected process

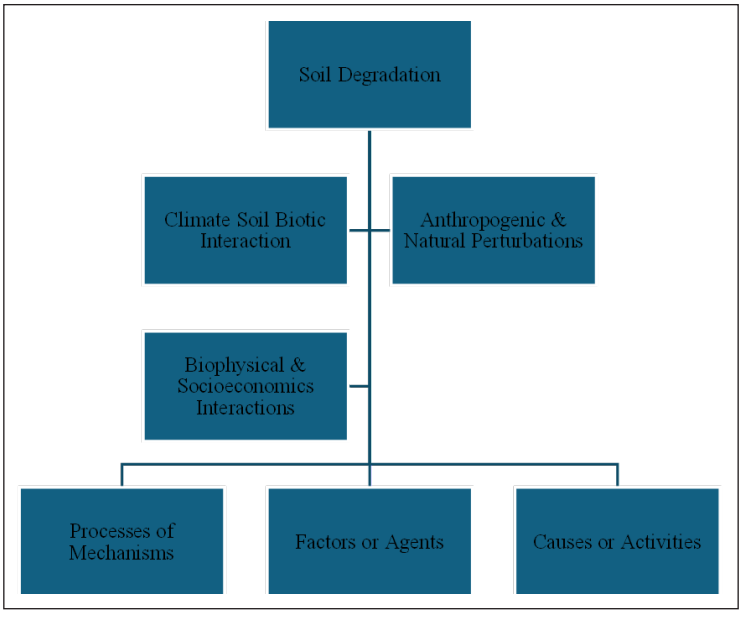

Figure 1. The main classifications and factors of environmental resource deterioration
Source: Lal, 2015

affecting terrestrial and aquatic resources within the river basin. These problems can occasionally be rather serious. However, existing environmental planning and management (EPM) approaches in Malaysia have generally addressed community participation, environmental perceptions, or spatial environmental conditions separately. Limited empirical attention has been given to integrating community Knowledge, Attitude, and Practice data with spatial Geographic Information System (GIS) modelling, particularly the Inverse Distance Weighting (IDW) technique, to identify spatial patterns of community-related environmental conditions and translate these findings into practical decision-making sub-models. This limitation constrains the ability of existing EPM approaches to provide spatially explicit and community-responsive decision support for rural environmental management. These studies contribute towards a deeper understanding of the interconnected dynamics between human activities and environmental sustainability, providing essential insights for shaping integrated forest conservation policies, promoting sustainable community development, and ensuring the long-term resilience of tropical forest ecosystems.

To operationalise the degradation of natural resources, all stakeholders, including communities, the government, non-governmental organisations, and academic researchers, should work together to develop actor-specific environmental action plans. The Environmental Planning and Management (EPM) method is becoming increasingly popular to address environmental degradation, particularly in rural areas (Lekwot et al., 2014; Nhu et al., 2020; Saeed & Cek, 2024). Figure 2 explains that the performance management procedures, including environmental policy, environmental planning, environmental implementation, environmental checking and correction, and environmental management review, are all part of the

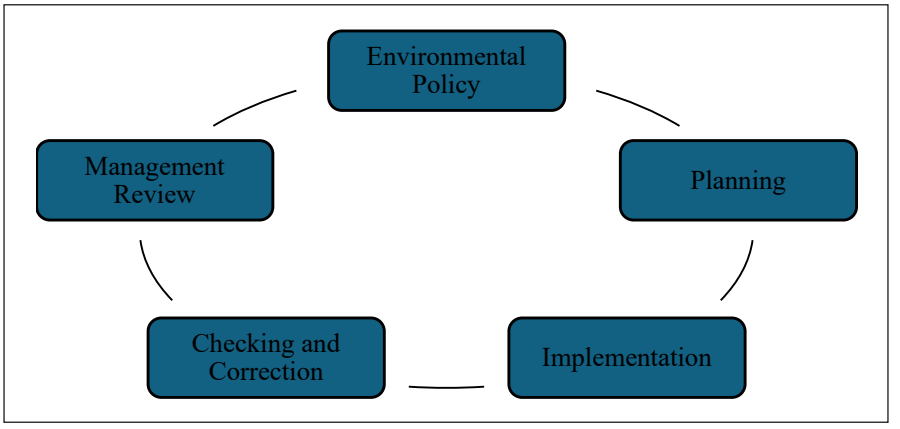

Figure 2. The performance of environmental planning and management
Source: Steger, 2000

EPM process (Steger, 2000). In rural areas, particularly in the vicinity of rural communities, the ability to accomplish more sustainable natural resource management is strengthened by the participation of local authorities and their public, commercial, and community sectors.

The effectiveness of the Environmental Management System (EMS) cycle is closely influenced by the level of Knowledge, Attitude, and Practice among local communities. Within the Planning stage, local community knowledge provides important context-specific information regarding environmental conditions, resource utilisation patterns, local environmental issues, and community needs. Such knowledge can support the identification of priority environmental problems and the formulation of appropriate management strategies. The Attitude component is particularly relevant to the implementation of environmental management initiatives, as positive environmental attitudes can strengthen community commitment, awareness, willingness to participate, and support for management interventions. Meanwhile, the Practice component reflects the actual behavioural actions of local communities, including the adoption of sustainable resource-use practices and participation in environmental conservation activities. These practices also contribute to the Checking and Corrective Action stages by enabling communities to monitor environmental conditions, identify implementation gaps, provide feedback, and participate in continuous improvement. Therefore, the level of Knowledge, Attitude, and Practice among local communities should not be viewed as independent community characteristics but as interconnected components that support each stage of the EMS performance cycle, thereby strengthening the effectiveness and sustainability of the proposed Environmental Resource Management Model.

Incorporating local perspectives, indigenous knowledge systems, and lived experiences into the EPM process. EPM ensures that strategies are culturally sensitive and context-specific, making them more effective for the local population. The relevance and effectiveness of environmental action plans by aligning them with community values, traditional land use practices, and socio-economic conditions. The EPM process in community settlements in Malaysia will improve ecological sustainability. This development is also promoting equitable and efficient use of natural resources. Besides that, it manages ecological hazards within development planning. According to Susilawati et al. (2017) and Mohiuddin et al. (2018), these efforts are grounded in basic systematic planning and resource management. These are contributing to decision-making based on the broader political-administrative environment. Besides that, local perspectives ensure that EPM initiatives are relevant and build a sense of community ownership and empowerment.

Traditional ecological knowledge, including indigenous water management techniques, seasonal agricultural cycles,

and local conservation practices, provides invaluable insights into sustainable resources. Furthermore, understanding the lived experiences of the communities, including their social structures, belief systems, and historical interactions with the environment, allows for more nuanced and inclusive environmental planning. Recognising and valuing these diverse knowledge systems, the EPM process strengthens community resilience, enhances adaptive capacities to climate and ecological changes, and fosters long-term stewardship of natural resources. Such participatory approaches contribute significantly towards bridging the gap between scientific planning and grassroots realities, ultimately leading to more holistic, effective, and enduring environmental governance. Therefore, this study assesses the Knowledge, Attitude, and Practice of rural communities regarding environmental resource management and integrates the resulting community-based data with GIS spatial modelling using the Inverse Distance Weighting (IDW) technique. This integration is intended to identify spatial variations in communities' Knowledge, Attitude, and Practice and environmental conditions and to support the formulation of practical decision-making sub-models within the EPM framework. By linking community-derived evidence with spatial analysis, the study seeks to strengthen the applicability of EPM for locally responsive and spatially informed environmental management in rural Malaysia.

METHODS

Study Area

The Terengganu River Basin and Kenyir Lake areas are characterised by a diverse network of rural settlements distributed along the riverbanks and surrounding the vast man-made Kenyir Lake. This region covers an expansive landscape, with Kenyir Lake alone spanning approximately 260,000 hectares and hosting over 340 islands. Additionally, the area boasts more than 14 waterfalls, rapids, rivers, limestone caves, and lush tropical forests, offering significant ecological and tourism value. The Terengganu River, flowing from Kenyir Lake through various rural and urban settlements before reaching the South China Sea, is a vital natural and socio-economic artery for local communities. The basin remains predominantly forested, with over 60% of its landscape undeveloped, enhancing its ecological importance and contributing to regional climate regulation, carbon sequestration, and biodiversity conservation (Wahab et al., 2025; Wahab et al., 2026).

Communities residing along the Terengganu River and Kenyir Lake, including Malay settlers and traditional fishing and farming communities, depend heavily on natural resources for their livelihoods, such as fishing, agriculture, and ecotourism. The total population along these settlements is estimated to be around 8,000 to 12,000 residents, dispersed across numerous villages. Given their reliance on the natural environment, development pressures have sometimes triggered

socio-environmental challenges such as deforestation, water pollution, biodiversity loss, and socio-economic vulnerabilities. The proximity to the Taman Negara National Park, a UNESCO-recognized biosphere reserve, further elevates the need for integrated, balanced conservation efforts that promote environmental stewardship and socio-economic resilience. Recognising these dynamics, the study applied an area sampling method, involving the selection of more than 10 villages along the Terengganu River Basin and the Kenyir Lake. These villages were selected based on geographical distribution, proximity to water resources, livelihood patterns, and vulnerability to environmental changes. Figure 3 illustrates the study location map for developing a collaborative model for environmental resources management tailored to the needs and sustainability of the community settlements in the Terengganu River Basin and Kenyir Lake Basin (Universiti Sultan Zainal Abidin (UniSZA), 2025).

Research Methodology

A quantitative survey of rural villages around the Terengganu River Basin and Kenyir Lake was used to gather the primary data, and the questionnaires were self-administered. In this study, the questionnaires were distributed using a

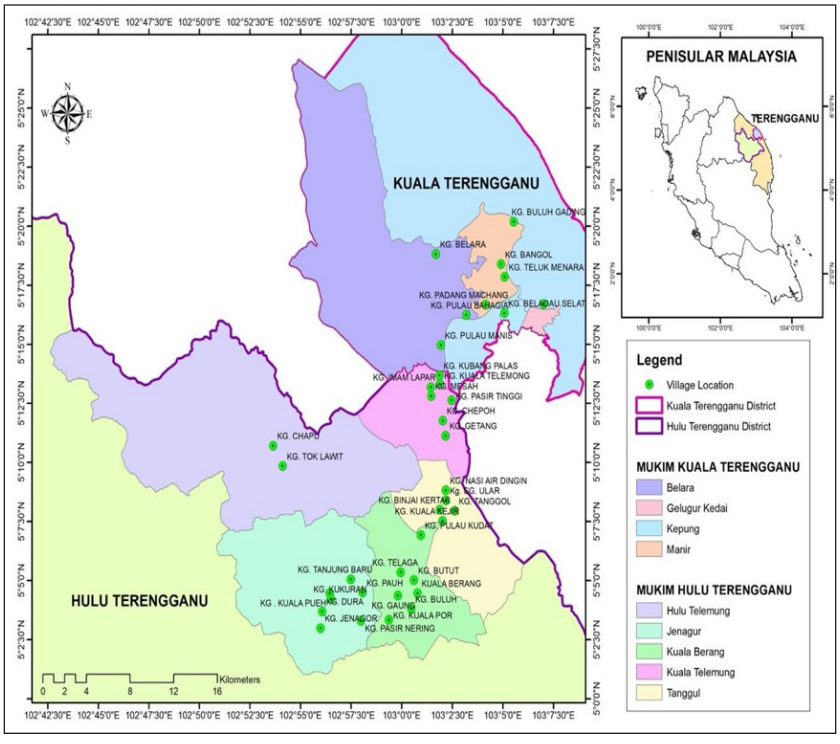

Figure 3. The study location for the collaborative model study of environmental resources management in the Terengganu River Basin and Kenyir Lake
Sources: Universiti Sultan Zainal Abidin (UniSZA), 2025

sampling technique known as convenience sampling. The study employed a multistage area-based sampling approach combined with convenience sampling at the respondent level. First, the study areas were selected based on the geographical distribution of local community settlements within the Terengganu River Basin and Kenyir Lake to ensure appropriate spatial coverage of the study area. Selected villages and settlements were then included as sampling locations. Within these selected locations, individual respondents were recruited using convenience sampling based on their availability, accessibility, willingness to participate, and fulfilment of the established study criteria. Therefore, the sampling procedure combined area-based selection of sampling locations with convenience sampling for the recruitment of individual respondents. A total of 380 respondents from the selected local community settlements participated in the study. The sample size for this study was determined based on the total population of the local communities residing in the selected villages within the Terengganu River Basin and Kenyir Lake area. Using an appropriate sample size determination approach with a 95% confidence level and a 5% margin of error, a minimum sample size of 380 respondents was considered adequate for the study. The respondents were distributed among the selected villages based on the relative population size of each village. However, considering the accessibility of respondents and their willingness to participate, a convenience sampling approach was applied for the final selection of respondents within each village. This approach ensured adequate representation of local communities across the selected study areas while accommodating fieldwork accessibility and respondent availability.

A non-probability convenience sampling approach was adopted to recruit respondents from the selected villages. This approach was selected due to practical constraints associated with accessing dispersed rural communities, the availability of eligible respondents during the fieldwork period, and the voluntary nature of participation. In addition, the absence of a complete and updated sampling frame of eligible residents across all selected villages made the implementation of probability-based sampling difficult. Efforts were nevertheless made to obtain responses from different villages and community settings to capture variation in local community perspectives. The final sample comprised 380 respondents. The use of convenience sampling may introduce sampling bias because respondents were selected based on accessibility, availability, and willingness to participate rather than through random selection. Consequently, the findings may not be fully generalisable to the entire population of residents in the Terengganu River Basin and Kenyir Lake area. The results should therefore be interpreted as reflecting the perceptions, knowledge, attitudes, and practices of the surveyed respondents rather than representing all residents in the study area. Future studies could employ probability-based

sampling, such as stratified or systematic random sampling, using an updated population sampling frame to improve representativeness and generalisability.

According to Van der Waldt (2020), the sampling approach has the following features: every individual who fits the requirements is invited to participate; the researcher's judgement is utilised to choose individual subjects; it is a more straightforward and cost-effective process than random selection. Well-established measuring scales found in earlier studies were used to create this research tool. Modifications were made to ensure the chosen products fit within the framework of resource management (Razak et al., 2019; Wahab et al., 2019; Wahab et al., 2024; Yunus et al., 2019). The questionnaires contain a few main sections such as demographics, practice, attitude, and knowledge of environmental resource management. The questionnaire consisted of three constructs. Knowledge was assessed using binary (True/False) items, while Attitude and Practice were measured using a five-point Likert scale. The questionnaire was reviewed by experts for content validity and pre-tested with respondents having similar characteristics to the study population. The internal consistency was satisfactory, with KR-20 = 0.81 for Knowledge, Cronbach's $\alpha = 0.86$ for Attitude, and Cronbach's $\alpha = 0.84$ for Practice. This study applied three statistical methods: Discriminant Analysis (DA), Descriptive Analysis, Hierarchical Agglomerative Cluster Analysis (HACA), and extended to a GIS spatial model using interpolation using *Inverse Distance Weighting* (IDW). For the spatial analysis, GPS coordinates were assigned to each selected village based on the village reference/central location rather than individual household coordinates. The mean Knowledge, Attitude, and Practice scores for each village were linked to these coordinates and used as the input points for IDW interpolation. The continuous variables interpolated were the composite Knowledge, Attitude, and Practice scores, which generated the corresponding spatial layers used in the Environmental Resource Management Model (ERMM).

According to Chua (2009), Discriminant Analysis (DA) is an inferential statistical technique used to predict study respondents, specifically whether they are correctly classified into the dependent variable category by considering several predictor variables. In addition, this analysis is a unidimensional test used to examine specific parameters only, and not all questions will be selected for analysis. While Descriptive Statistical Analysis is a type of statistics used to describe the characteristics of variables, the t-test is an inferential statistical test used to examine the differences between two or more data groups. In addition, HACA was used in this study as a cluster analysis technique, which aims to create a hierarchy of environmental resource management cluster questionnaires. The clustering outcome will help the settled communities develop an implementation strategy for the environmental resource management model. Subplots that will be separated based on the primary criteria in this classification showed the clustering

of ecological resource management implementation plans. Based on the HACA classification for implementation planning in the environmental resource management model in the Terengganu River Basin and Kenyir Lake, Figure 4 depicts the HACA illustration (Azid et al., 2015; Wahab et al., 2017). Every branch represents a data point (independent and dependent variables), whereas the root represents the entire dataset (questionnaires). Cutting at the correct times is based on the final clustering derived from the dendrogram.

RESULTS AND DISCUSSION

Discriminant Analysis (DA)

Discriminant Analysis (DA) was conducted to determine the Knowledge, Attitude, and Practice items that significantly discriminate between respondents based on residential location/village. The categorical grouping variable was used as the dependent variable, while the KAP items were treated as discriminating variables. The analysis was initially performed using the Tests of Equality of Group Means to identify individual items that differed significantly between the groups. To provide a complete multivariate interpretation of the discriminant function, the analysis also considered the multivariate test statistics, including Wilks' Lambda, Chi-square, degrees of freedom, significance level, and other relevant discriminant function statistics. The results for the Knowledge, Attitude, and Practice components are presented in Table 1.

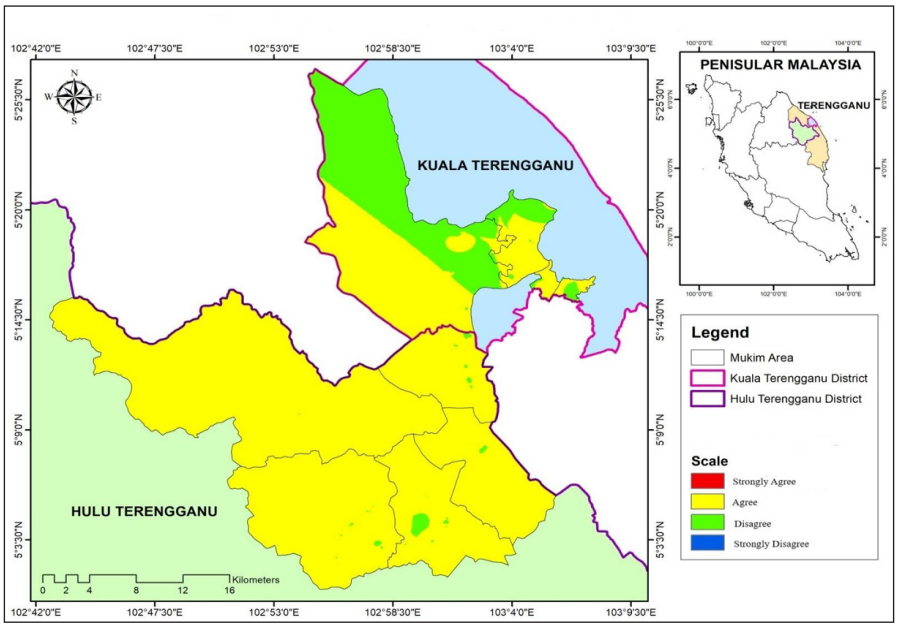

Figure 4a. The implementation planning in the environmental resource management model (Model A: Guidance from those responsible for environmental management)
Sources: Universiti Sultan Zainal Abidin (UniSZA), 2025

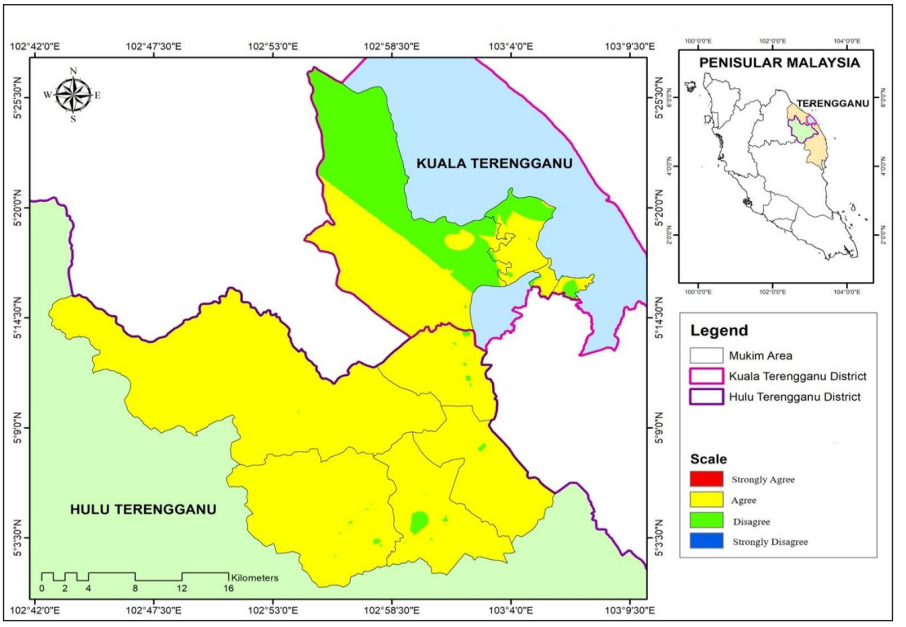

Figure 4b. The implementation planning in the environmental resource management model (Model B: The development of the environmental resource management system)
Sources: Universiti Sultan Zainal Abidin (UniSZA), 2025

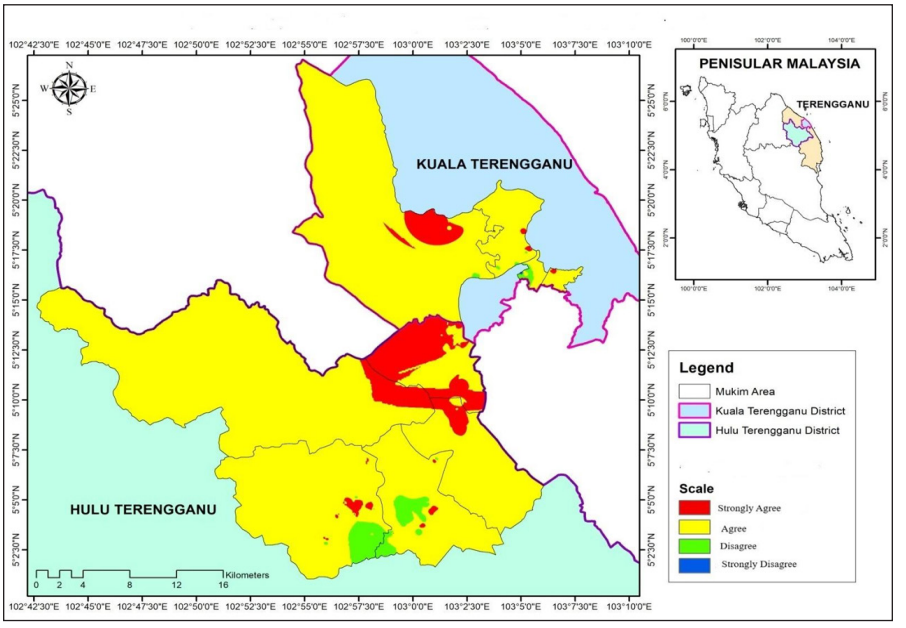

Figure 4c. The implementation planning in the environmental resource management model (Model C: Innovation of the existing environmental resource management system)
Sources: Universiti Sultan Zainal Abidin (UniSZA), 2025

Table 1
The community's practice, attitude and knowledge level regarding environmental resource management of the Terengganu River Basin and Kenyir Lake

Variable	Lambda	F	DF1	DF2	p-value
Community's Practice Level					
SA1	**0.9882**	**4.7595**	**1**	**380**	**0.0297**
SA2	0.9954	1.8324	1	380	0.1766
SA3	0.9945	2.2075	1	380	0.1381
SA4	0.9937	2.5190	1	380	0.1133
SA5	1.0000	0.0005	1	380	0.9816
SA6	**0.9779**	**9.0447**	**1**	**380**	**0.0028**
SA7	0.9945	2.1985	1	380	0.1389
SA8	0.9999	0.0277	1	380	0.8679
SA9	0.9991	0.3555	1	380	0.5513
SA10	0.9989	0.4473	1	380	0.5040
Community's Attitude Level					
SB1	0.9968	1.2731	1	380	0.2599
SB2	1.0000	0.0052	1	380	0.9423
SB3	1.0000	0.0095	1	380	0.9226
SB4	**0.9833**	**6.7929**	**1**	**380**	**0.0095**
SB5	0.9991	0.3739	1	380	0.5412
SB6	0.9928	2.9187	1	380	0.0883
SB7	0.9938	2.4789	1	380	0.1162
SB8	0.9989	0.4596	1	380	0.4982
SB9	1.0000	0.0036	1	380	0.9525
SB10	0.9972	1.1401	1	380	0.2863
Community's Knowledge Level					
SC1	0.9991	0.3483	1	380	0.5554
SC2	0.9950	2.0172	1	380	0.1563
SC3	0.9965	1.4198	1	380	0.2341
SC4	0.9961	1.5818	1	380	0.2092
SC5	**0.9900**	**4.0339**	**1**	**380**	**0.0453**
SC6	**0.9889**	**4.4988**	**1**	**380**	**0.0345**
SC7	1.0000	0.0028	1	380	0.9580
SC8	0.9969	1.2490	1	380	0.2644
SC9	**0.9871**	**5.2139**	**1**	**380**	**0.0229**
SC10	0.9770	9.4328	1	380	0.0023

Sources: Universiti Sultan Zainal Abidin (UniSZA) (primary survey data), 2025

Table 1 shows the unidimensional test of practice, attitude, and knowledge of environmental resource management. The DA for the practice, attitude, and knowledge domains of environmental resource management, respectively. There are two questionnaires (SA1 and SA6) (with significant values, p-value < 0.05). In DA, a statistically significant p-value ($p < 0.05$) indicates that the corresponding variable significantly differentiates the study groups and contributes to the discrimination between groups. Therefore, the significant variables identified in the analysis should be interpreted as discriminating variables rather than as indicators of a high level of agreement, attitude, practice, or knowledge. The level of agreement or knowledge should instead be assessed using descriptive statistics such as means, standard deviations, frequencies, or percentage distributions. The p-value of SA1 = 0.0297, and SA6 = 0.028. SA1 was statistically significant ($p = 0.0297$), indicating that this variable significantly differentiated the study groups with respect to practice related to improving environmental resource management through an integrated and sustainable management system. SA6 was also statistically significant ($p = 0.0028$), indicating that this variable significantly differentiated the study groups in terms of practice related to government regulations and commitment to environmental resource management modelling. The variable SA1 recorded a p-value of 0.0297, which refers to the question "Improving the environmental resource management system with an integrated and sustainable approach". This indicates that most respondents agree that a management system with integrated sustainability. Furthermore, the variable SA6 also shows a p-value of less than 0.05, specifically 0.0028, which refers to the question "Determination of government regulations and commitment to environmental resource management modelling". This means the results show that most respondents agree that the government regulations and commitment are important for collaboration in environmental sustainability. SB4 showed a statistically significant difference between the study groups ($p = 0.0095$), indicating that this variable significantly discriminated the groups in terms of their attitudes towards the development of an environmental management model based on community attitudes. Table 1 shows the unidimensional test of attitude toward environmental resource management. Only one out of 10 questionnaires recorded significant values as p-value < 0.05, as SB4. The p-value for SB4 = 0.0095. SB4 refers to the question, "Development of environmental management model based on the attitudes of communities". In the real world, environmental management in the community's attitudes, this model fosters bottom-up environmental stewardship rather than top-down enforcement. It's a dynamic, responsive, and human-centered approach crucial for long-term sustainability.

Besides that, Table 1 shows a unidimensional test of knowledge of environmental resource management.

There are four questionnaires (SC5, SC6, SC9, and SC10) (the significant values as p-value < 0.05). The p-value of SC5 = 0.0453, SC6 = 0.0345, SC9 = .0.0229 and SC10 = 0.0023. SC5 was statistically significant (p = 0.0453), indicating that this variable significantly differentiated the study groups in terms of knowledge concerning the arrangement of an environmental resource management system based on community knowledge. SC6 was statistically significant (p = 0.0345), indicating that this variable contributed significantly to discriminating the study groups regarding the integration of environmental and traditional management systems based on community knowledge. SC9 showed a statistically significant result (p = 0.0229), indicating that this variable significantly differentiated the study groups with respect to the integration of environmental management systems with community needs. SC10 was statistically significant (p = 0.0023), indicating that this variable significantly differentiated the study groups in relation to guidance and counselling from those responsible for natural resource management among communities. The variable SC5 obtained a p-value of 0.0453, which refers to the question "Arrange the environmental resource management system based on the knowledge of the communities". Community-based environmental resource management places local knowledge and participation at the core of sustainable practices. It empowers communities to manage resources through inclusive decision-making, adaptive strategies, and support from external stakeholders, ensuring ecological balance and social well-being. The variable SC6 recorded a p-value of 0.0345, referring to the question "Integration of environmental and traditional management systems based on the knowledge of communities". This shows that most respondents know the importance of an integrated management system. Furthermore, variables S9 and SC10 recorded p-values of 0.0229 and 0.0023, respectively. S9 refers to the question "The development of management and environmental management systems is integrated with the needs of communities". In contrast, SC10 refers to the "Guidance and counselling from those responsible for natural resource management among communities". Most respondents know the benefits of properly maintained environmental resource management and conservation. Based on these four variables, communities have a high level of knowledge regarding these issues.

Hierarchical Agglomerative Cluster Analysis (HACA)

The classification of implementation planning in the environmental resource management model is related to the practice, attitudes, and knowledge level among community settlements along the Terengganu River Basin and Kenyir Lake using HACA. Hierarchical Agglomerative Cluster Analysis (HACA) was conducted to group the questionnaire items (variables) based on the similarity of their response patterns across the sample. The analysis

was performed to identify clusters of related environmental management variables, which were subsequently used to develop the three sub-models of the Environmental Resource Management Model (ERMM). The resulting dendrogram illustrates the rescaled distance at which the variables were combined and supports the selection of a three-cluster solution (Table 2).

Based on the clustering results, the questionnaire items were grouped into three clusters corresponding to Model A, Model B, and Model C. HACA was used to classify each variable (the questionnaire consists of seven questions based on practice, attitudes, and knowledge, such as SA1, SA6, SB4, SC5, SC6, SC9, and SC10). The HACA analysis method transfers the data according to the classes of variables to form the implementation planning in environmental resource management models. The models formed, Model A, Model B, and Model C, are based on the homogeneity class of seven questions related to the practice, attitudes, and knowledge level in the sub-plot based on the specific characteristics. HACA aims to identify the implementation planning in the environmental resource management model based on the practice, attitudes, and knowledge level among community settlements. Then, the results from the classification model from HACA will be extended for a GIS spatial model using interpolation using the Inverse Distance

Table 2
The clustering classification model of the Terengganu River Basin and Kenyir Lake

Model	Question	Statement
MODEL A Guidance from those responsible for environmental management	SA1	Improving the environmental resource management system with an integrated and sustainable.
	SA6	Determination of government regulations and commitment to environmental resource management modelling.

Model A is referring to the guidance from those responsible for environmental resource management among among community settlements along the Terengganu River Basin and Kenyir Lake. If government regulations are established, natural resource management modelling is dedicated, and the environmental resource management system is enhanced with an integrated and sustainable approach, communities' awareness and behaviour regarding the importance of maintaining environmental resources will improve. One effective method for achieving sustainable development is community involvement guided by environmental specialists. Figure 4(a) showed the distribution requirements of implementation planning in developing process of model based on the practice, attitude, and knowledge. Based on the distribution, most of the communities strongly agree with the guidance and education as well as knowledge on the environmental resource management. In addition, the spatial analysis showed most respondents in this study agree with the guidance measures from those responsible in managing natural resources and guiding them to be more sensitive to the latest information of environmental sustainability. It is estimated that almost 90% of the respondents around the study area represent the entire communities strongly agree and agree with this management modelling. This is because, communities in location study starting to accept the opinion that sustainable development offers a balanced form of development between current development opportunities and survival for future generations.

Table 2 (*continued*)

Model	Question	Statement
MODEL B The development of environmental resource management system	SB4	Development of environmental management model based on the attitudes of communities.
Model B refers to the development in various specific aspects such as the human capital development among the communities based on the education system of environmental resource management. Figure 4(b) showed the requirement distribution the implementation planning in environmental resource management model (Model B: The development of natural resource management system) based on the attitudes level among communities Terengganu River Basin and Kenyir Lake. The spatial distribution stated most respondents in agree with the development of environmental resource management which involves developing in aspects of education system, policy, dissemination of technology information and pollution control methods as well as an effective of conservation and preservation programmes of natural resources management. Meanwhile, mostly of communities also agree with this management model. In addition, 70% of respondents in whom agree with question SB4 ("Development of environmental management model based on the attitudes of communities"). It can be said that the communities are now increasingly attitudes level of environmental resource management policies where they seem more sensitive to the latest information on environmental management. Besides that, Malaysia is now more committed in the environmental resource management especially in conservation and preservation's programmes especially forests sources, which are the natural resources closest to the communities. The ministry through agencies related the environment such as Department of Agriculture (DOA), Department of Wildlife and National Park (DWNP) and Department of Environment (DOE) constantly alert and sensitive about any problems and latest information about development of environmental resource management especially along the rural areas (Entezami et al., 2024; Goessens et al., 2014; Otieno et al., 2016).		
MODEL C Innovation of existing the environmental resource management system	SC5	Arrange the environmental resource management system based on the knowledge of the communities.
	SC6	Integration of environmental and traditional management systems based on the knowledge of communities.
	SC9	The development of management and environmental management systems is integrated with the needs of communities.
	SC10	Guidance and counselling from those responsible for natural resource management among indigenist's communities.
Model C refers to the innovation of the current natural resource management system, which means that rather than being abolished, the management system that has been implemented needs to be improved in accordance with the needs of rural communities as determined by the level of technological development. Addressing poverty reduction, food security, and environmental sustainability in an integrated way is the biggest challenge facing rural development, particularly in rural areas (Fauziah & Agamuthu, 2012; Fuzi et al., 2019; Miao et al., 2017). In addition, combating land degradation and desertification, stopping deforestation, encouraging appropriate management of water resources, and safeguarding biodiversity are other difficult issues that must be addressed in order to improve the innovation of the current environmental resource management system. To do this, rural communities in the Kenyir Lake Basin must actively participate in communication processes. Most rural communities agree with the Model A's natural resource management, but it is estimated only 5% of respondents do not agree with the implementation of this model management (Refer Figure 4(a)). From the GIS spatial model showed the respondents from southeastern part of study location who not really agree with this model. However, it can be seen most of rural communities agree with the improvement of innovation of existing the environmental resource management system. In conclusion, the knowledge level about natural resource management among rural communities is improving and it needs to be nurtured from an early age		

Sources: Universiti Sultan Zainal Abidin (UniSZA), 2025

Weighting (IDW) method to determine the distribution pattern of respondents about the environmental resource management model. For the spatial analysis, the categorical responses obtained from the questionnaire were first transformed into numerical agreement scores based on the Likert scale. For each selected village, the mean agreement score was calculated for each ERMM sub-model (Model A, Model B, and Model C) based on respondents' responses in that village. These village-level mean scores were then assigned to the corresponding spatial locations (village centroids) and used as continuous input values for the Inverse Distance Weighted (IDW) interpolation. Thus, the IDW analysis did not directly interpolate categorical or cluster-membership responses or percentage values; rather, it interpolated village-level mean agreement scores for each sub-model to generate continuous spatial surfaces.

Based on the HACA, the total number of respondents was 380, and they were classified into three classes of implementation planning in the environmental resource management model. Table 2 shows the questionnaires about implementation planning in natural resource management based on the clustering classification of the model at rural community settlements along the Kenyir Lake Basin. These questions are classified into three clusters using HACA, such as Cluster 1 (Model A: Guidance from those responsible for environmental management), Cluster 2 (Model B: The development of a environmental resource management system), and Cluster 3 (Model C: Innovation of the existing environmental resource management system). Model A refers to an element of the guidance from those responsible for environmental management, which consists of questions SA1 and SA6. At the same time, Model B focused on developing the ecological resource management system, which consists of question SB4. Model C refers to the innovation of the existing natural resource management system, which consisted of SC1, SC2, SC9, and SC10.

CONCLUSION

Resource management is essential to enhancing the community's ability to care for the environment. Addressing structural and behavioral dimensions is critical to fostering environmental consciousness, ethical values, skills, and sustainable behavior among communities. Based on respondents' opinions and requirements, several strategic actions are necessary, including guidance from those responsible for environmental management, developing an ecological resource management system, and innovating the existing one. The empirical Knowledge, Attitude and Practice findings provided the baseline for developing these three strategic components as Model A (Guidance), Model B (System Development), and Model C (Innovation), respectively. The spatial analysis using IDW interpolation further identified variations in KAP responses across the settlements along the Terengganu River Basin and Kenyir Lake, indicating areas

that may require greater management attention. Integrating the Environmental Resources Management Model (ERMM) provides a systematic approach to balancing environmental, economic, and social factors through participatory planning and decision-making. This model emphasizes community involvement, inter-agency collaboration, and the sustainable use of resources. Concurrently, implementing an Environmental Management Plan (EMP) ensures that all environmental impacts are identified, monitored, and mitigated effectively through proactive planning and regulatory compliance. The synergy between the ERMM and EMP frameworks offers a holistic and adaptive strategy for addressing environmental challenges in community settlements, particularly in ecologically sensitive areas like the Terengganu River Basin and Kenyir Lake.

IMPLICATIONS OF THE STUDY

This study provides valuable insights into the role of community awareness, practice, and knowledge in the process of developing sustainable environmental resource management. The proposed Environmental Resource Management Model (ERMM) can serve as a strategic tool for policymakers, local authorities, and environmental stakeholders. These outputs contributed to enhancing participatory environmental governance. The findings emphasise the importance of integrating traditional knowledge with scientific approaches, fostering community empowerment, and promoting localised environmental education. The novelty of studies to ensure the long-term sustainability of natural resources in rural Malaysia.

LIMITATIONS AND RECOMMENDATION FOR FUTURE RESEARCH

Based on past studies, several have examined environmental degradation and resource management in Malaysia, but only a few studies have integrated quantitative and spatial techniques to develop a comprehensive environmental community-based model. There is limited attention, particularly from the perspective of local community practices, knowledge, and attitudes, about the environmental dynamics of the Terengganu River Basin and Kenyir Lake. Despite the comprehensive data collected, this study is limited by its focus on selected villages within the Terengganu River Basin and Kenyir Lake, which may not fully represent the diversity of environmental perceptions across different regions. Future studies could expand the geographic scope and include comparative analyses across other river basins in Malaysia. Additionally, incorporating qualitative methods such as focus groups or interviews may deepen the understanding of socio-cultural dimensions influencing environmental attitudes. Future research should also explore the impact of specific policy interventions and assess the long-term effectiveness of the proposed management model through continuous monitoring.

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Sustainability and Relevance of Traditional Medicine among the Temiar Community in Modern Life at RPS Kuala Betis, Kelantan

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ABSTRACT

Traditional medicine among the Temiar community at RPS Kuala Betis combines herbal knowledge with sewang-based healing and cultural practices. Development, environmental change, easier access to biomedical care, and market exposure have altered how this knowledge is obtained, transmitted, and practised. This study explores strategies through which the community sustains traditional medicine while adapting selectively to modern life. A qualitative ethnographic approach involved 22 informants (14 women, 8 men), using interviews, participant observation, and document analysis during fieldwork from July 2023 to August 2024; data were analysed in NVivo 12 Plus. The findings show four interrelated strategies. First, the community practises medical pluralism, using modern health services alongside selected traditional practices. Second, knowledge is transmitted through everyday oral interaction and participation in collecting and preparing herbs and sewang materials. Third, herbal products are adapted to contemporary markets through improved packaging, pricing, training, exhibitions, and limited digital marketing. Fourth, cultural boundaries remain important: sacred medical and death sewang are not positioned as tourism products, whereas performance sewang can be shared publicly. Sustainability therefore reflects community-led adaptive continuity, in which practices are selectively modified while culturally sensitive knowledge and ritual boundaries are protected. The study contributes a locally grounded account of cultural resilience, intergenerational learning, livelihood adaptation,

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and institutional support, with implications for community-led heritage programmes, Orang Asli wellbeing, and culturally appropriate policy design.

Keywords: Cultural resilience, ecotourism, knowledge transmission, Orang Asli, sewang, Temiar, traditional medicine

INTRODUCTION

Traditional medicine is both a health practice and a form of cultural heritage. Among the Temiar, medicinal knowledge is embedded in relationships among people, forests, spiritual understandings, customary rules, and intergenerational learning. Its preservation is therefore important not only because particular remedies or rituals may continue to be used, but also because the knowledge carries language, identity, environmental understanding, social relationships, and community authority. Contemporary scholarship similarly emphasises that Indigenous and local knowledge systems are dynamic biocultural systems whose continuity is threatened by rapid social-ecological change while remaining relevant to sustainability and wellbeing (Fernández-Llamazares et al., 2021; Turner et al., 2022).

The Temiar are part of the Senoi grouping of Orang Asli communities in Peninsular Malaysia and have long maintained close relationships with forest environments and inherited cultural practices (Ramle et al., 2020). At RPS Kuala Betis, traditional medicine includes the use of herbal plants and sewang. Development and modernisation have created new opportunities, including access to clinics, transport, training, markets, and communication technologies, but they have also changed access to forest resources and the conditions under which knowledge is learned and practised. The original field accounts in this study show that some community members now use biomedical services because they are easier to access while still retaining sewang or herbal practices as meaningful alternatives or complements. Broader Orang Asli research also indicates that secure land ownership can contribute to Indigenous economic empowerment, which is relevant because access to land and forest resources underpins many resource-based cultural and livelihood practices (Mohd Khori et al., 2024).

Preservation must therefore be understood as more than keeping practices unchanged. Indigenous knowledge can remain viable through selective adaptation, provided that communities retain authority over what may be shared, modified, commercialised, or kept culturally restricted. This perspective is consistent with work on Indigenous cultural wellbeing, sovereignty, and community-led knowledge governance, which stresses that health and cultural continuity are interconnected and that external programmes should not displace Indigenous decision-making (Biles et al., 2024; Joseph, 2024; Smith, 2012).

Existing Malaysian studies have documented Orang Asli traditional knowledge, cultural change, ritual

transformation, and institutional roles (Ahmad Khairuddin & Hanafiah, 2021; Jalaludin & Abdullah, 2020; Rosnon et al., 2018; Syuhana Khalid, 2014). More recent research has also documented Orang Asli plant knowledge and its vulnerability to environmental and generational change (Tharmabalan, 2023). A 2024 study conducted at RPS Kuala Betis specifically examined Temiar herbal remedies and their potential as local/ecotourism products (Lokman et al., 2024). The present study differs by analysing herbal medicine and sewang together and by examining how intergenerational transmission, plural healing, commercial adaptation, cultural boundaries, and JAKOA support jointly shape the sustainability of traditional medicine.

Accordingly, the study addresses the following research aim: to explore the strategies employed by the Temiar community at RPS Kuala Betis to preserve and adapt traditional medicine in modern life. Analytically, the paper asks how continuity is produced through selective change and how community practices, institutional support, and cultural safeguards interact to produce sustainability outcomes.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Indigenous Medicine, Biocultural Knowledge and Health Sovereignty

Traditional medicine is not reducible to a catalogue of remedies. It is often embedded in culturally specific understandings of health, relationships to land, spirituality, kinship, and collective memory. Contemporary ethnobiological scholarship argues that locally grounded knowledge can contribute to broader sustainability debates only when its contextual and cultural specificity is preserved (Fernández-Llamazares et al., 2024). Turner et al. (2022) similarly emphasise the close relationship among Indigenous knowledge, ethnobiology, biodiversity, and sustainability. At the livelihood level, forest resources have also been documented as an important source of income for Orang Asli communities, reinforcing the link between ecological access, household economy, and the continuity of local knowledge (Ab Manaf et al., 2021).

A sovereignty-oriented perspective adds an important ethical dimension. Indigenous health interventions are more durable when communities have meaningful authority over priorities, knowledge, and implementation (Joseph, 2024). In this study, this principle is especially relevant to the distinction between knowledge that may be publicly shared, such as performance sewang, and sacred forms of medical or death sewang that community members regard as inappropriate for tourism. A decolonial approach therefore requires researchers and institutions to treat Temiar knowledge holders as authorities rather than merely sources of data (Nakata, 2007; Smith, 2012).

Modernisation, Cultural Resilience and Selective Adaptation

Modernisation can produce both erosion and adaptation. In Orang Asli contexts,

changes in consumption, settlement, religion, healthcare, environment, and ritual practices have been documented as communities respond to new institutions and opportunities (Ahmad Khairuddin & Hanafiah, 2021; Rosnon et al., 2018). The transformation of siwang/sewang from ritual contexts to public performance in some communities also illustrates that cultural continuity can occur through a change in function rather than through exact replication (Jalaludin & Abdullah, 2020).

In the present study, 'modern adaptation' is used in a specific sense: (a) plural or hybrid healing choices that combine clinic/hospital use with traditional medicine; (b) commercial adaptation through packaging, pricing, exhibitions, and digital communication; (c) tourism integration where culturally appropriate; and (d) institutional collaboration, particularly with JAKOA. Cultural resilience is therefore treated as the capacity to retain meaningful knowledge and identity while selectively adjusting practice to changing social, economic, and environmental conditions.

Intergenerational Transmission as Situated Learning

The transmission of Temiar medicinal knowledge is also interpreted through Lave and Wenger's (1991) concept of situated learning and communities of practice. Knowledge is learned not only through explicit teaching but also through participation in everyday activities with more experienced family and community members. Accompanying elders to collect herbs, observing preparation techniques, helping with sales, and participating in sewang-related preparation can therefore be understood as legitimate forms of learning through practice. This perspective clarifies why apparently informal participation may be central to knowledge continuity.

Malaysian Policy Context

The policy relevance of this study extends across heritage, health, and Orang Asli development. The National Heritage Act 2005 (Act 645) provides a national framework for protecting cultural heritage, including intangible heritage. Traditional medicine and cultural performance can therefore be considered within wider efforts to document, safeguard, and transmit heritage without detaching it from the communities that hold it.

The Traditional and Complementary Medicine Act 2016 (Act 775) provides a regulatory context for recognised traditional and complementary medicine practices in Malaysia. The present study does not assess regulatory compliance or clinical efficacy; rather, it highlights that safety, quality, practitioner requirements, and applicable regulation become increasingly relevant when community-based practices or products move into formal markets or services. JAKOA's Strategic Plan 2023–2026 provides a further institutional context for Orang Asli development, while the Malaysia MADANI framework emphasises sustainability, wellbeing, respect for tradition, and local wisdom. At the international level, the findings are relevant

to SDG 3 (Good Health and Well-Being) and SDG 11.4, which calls for stronger efforts to safeguard cultural and natural heritage (United Nations, 2015).

Conceptual Framework and Theoretical Contribution

Figure 1 summarises the analytical framework developed for this study. Modernisation pressures do not act on traditional knowledge in a simple one-way process. Instead, the outcome depends on adaptive mechanisms, selective innovation, institutional support, and culturally defined safeguards. The theoretical contribution is a community-led adaptive sustainability perspective: continuity is produced through selective change, and the legitimacy of that change depends on community control over knowledge, practice, and cultural boundaries.

METHODS

Research Design and Study Setting

This study employed a qualitative ethnographic approach at RPS Kuala Betis, Gua Musang, Kelantan. Ethnography was selected to understand traditional medicine in the community's natural social and cultural context. Data collection combines participant observation, interviews, and document analysis. Interviews were the principal method for eliciting traditional knowledge and accounts of cultural change, while participant observation enabled the researcher to observe and participate in herbal preparation and sewang-related activities. Documentary materials were used to support and contextualise field evidence.

Sampling and Informants

A total of 22 informants participated in the study: 14 women and 8 men. Their roles

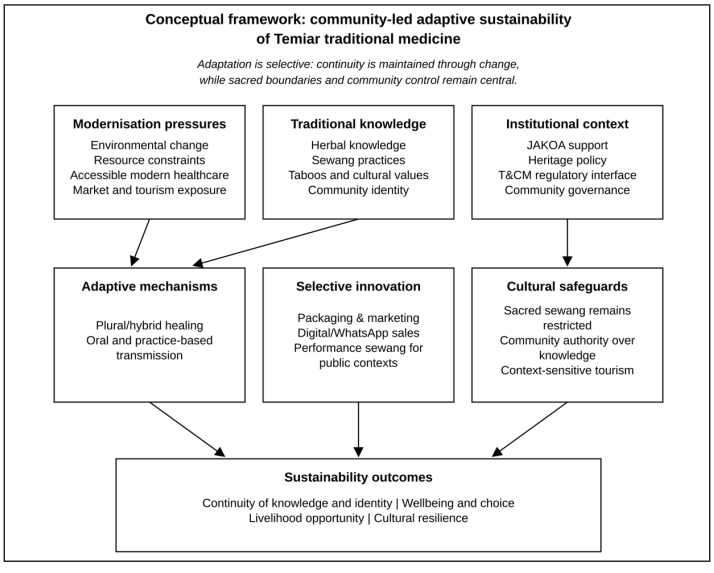

Figure 1. Conceptual framework linking modernisation, traditional knowledge, adaptation mechanisms, and sustainability outcomes
Source: Developed for this study

comprised three traditional midwives, eight community residents, two village heads, one JAKOA officer, two Orang Asli religious teachers (GOA), two members of the neighbouring Malay community, two Ministry of Health personnel, one academic, and one school teacher. Informants were selected because they had relevant knowledge, experience, or community/institutional roles that could address the study objectives. A culturally knowledgeable key informant with extensive experience in traditional medicine and herbal-product marketing also assisted the researcher in identifying other relevant informants. Participants were coded IR1-IR22 during data organisation and reporting.

Sample adequacy was assessed through prolonged observation and repeated interviewing. Comparable questions were asked across informants to obtain confirmation and certainty, and information was checked repeatedly until the observations and interviews produced sufficiently consistent accounts and no further issues emerged; this was treated as the point of data saturation. Member checking with the key informant was also conducted throughout data collection to confirm that the information obtained was accurate and relevant.

Fieldwork Procedure and Ethics

Preliminary field visits were conducted on 1-2 March and 14-16 May 2023. Formal fieldwork then took place from July 2023 to August 2024, with documented visits on 16 July 2023, 4 August 2023, 19-23 September 2023, 10-17 December 2023, 4-5 April 2024, 22-26 May 2024, and 4-8 August 2024. The researcher made repeated visits to the study area and, as part of the fieldwork, stayed with residents to facilitate direct observation, in-depth interviewing, and participation in everyday community activities.

Before fieldwork, community members were informed that the study would be conducted, the research objectives were explained, and their cooperation was sought. Official permission to conduct fieldwork at RPS Kuala Betis was obtained from the Department of Orang Asli Development (JAKOA), and the permission letter is retained in the thesis appendix. In the manuscript, participants are reported using IR codes rather than personal names.

Data Analysis and Triangulation

Interview data were transcribed verbatim in Microsoft Word before being organised and imported into NVivo 12 Plus. Audio recordings, field notes, photographs, and videos were reviewed during familiarisation. Analysis proceeded through transcription, data organisation, familiarisation, coding, theme development, reliability and validity checks, and reporting. Relevant excerpts from the transcripts were coded into NVivo Nodes. The theme development was guided by the research questions, research objectives, and previous literature, while material emerging from fieldwork was also used to identify and refine categories and themes.

Trustworthiness was strengthened through repeated data checking, data saturation, member checking, expert validation, and triangulation. Member checking was undertaken throughout data collection by comparing information across informants and asking the key informant to confirm the accuracy of the data. One expert reviewed the themes, interview questions, and analysed data through discussions held from the early stages of the research until completion and confirmed the credibility of the analysed material.

Triangulation drew on interviews, participant observation, and document analysis. Interview accounts were compared with observed practices and documentary/contextual evidence; convergence and inconsistencies were considered during interpretation. For example, accounts of practical knowledge transfer were considered alongside observations of younger family members participating in herbal preparation, while accounts of market adaptation and institutional support were considered alongside observed packaging, training, infrastructure, exhibition, and carnival activities.

RESULTS

The findings are organised thematically to answer the research aim directly. Rather than repeating descriptive material across subsections, each theme identifies a distinct sustainability strategy and separates empirical evidence from later theoretical interpretation in the Discussion.

Selective Adaptation and Plural Healing

The first form of adaptation is the pragmatic use of modern healthcare alongside traditional practices. Participants described access constraints to herbal resources and the convenience of clinics or hospitals. IR1 explained:

> There are no more medicines here, all the palm oil plantations are far behind, getting to the highway is difficult. I usually go to the hospital if I'm sick. (IR1)

IR2 similarly described using a clinic while still retaining sewang:

> If I'm sick, I go to the clinic, it's easier, but I still use sewang as well… (IR2)

These accounts show that modern medicine is not necessarily replacing traditional medicine in a complete or linear way. Instead, some community members make situational choices based on accessibility, perceived need, and cultural preference. In the context of the research aim, this plural approach represents a strategy of adaptation: traditional medicine remains relevant even when biomedical services become part of everyday health-seeking behaviour.

Intergenerational Transmission Through Oral and Practical Learning

Knowledge transmission occurs through two closely connected pathways: oral communication and participation in practice. Oral transmission takes place through

stories, songs, advice, taboos, everyday conversation, family interaction, and explanations provided by healers, midwives, elders, and other knowledge holders. Because much of this learning is embedded in daily life, younger people may acquire values and procedural knowledge gradually rather than through formal lessons.

Practical transmission occurs when younger family or community members accompany experienced people during forest visits, plant selection, harvesting, processing, preparation, or sewang-related activities. IR3 described being accompanied by a grandson when obtaining plants:

> Grandson brings it, rents a car. Women have to bring their husbands too…
>
> (IR3)

Field observations also recorded younger relatives participating in herbal preparation and online sales, as well as the preparation of tempo' used in sewang activities (Figure 2). These observations are important because they show that participation is a mechanism of learning. They also qualify for the broad claim that younger people are uninterested: interest is uneven, but opportunities for participation can sustain transmission within particular families and networks.



Figure 2. Practice-based transmission: an informant preparing tempo' used in sewang activities
Source: Field study, 2023

Herbal Products, Commercial Adaptation and Ecotourism Potential

A third strategy is the adaptation of herbal products to contemporary markets. The field evidence indicates that a small number of participants were especially active in marketing, while other community members contributed to collection, preparation, or packaging. Reported retail prices ranged from RM15 to RM30 depending on the product and its intended use. IR3 contrasted earlier sales in simple plastic packaging with later changes following training:

> Back in the 90s, I sold it for 5 Ringgit per pack, just in a basket with plastic. After attending a course by JAKOA, I started packaging it in containers like this; it looks nicer. People also liked it and wanted to buy it.
>
> (IR3)

The shift from loose or simple packaging to labelled and more standardised presentation (Figures 3 and 4) demonstrates commercial adaptation. Figure 5 shows herbal product packaging with price labels and usage information. It can improve visibility and customer confidence, but the study does not test product efficacy or safety and should not be read as clinical endorsement. Likewise, the present ethnographic evidence supports the



Figure 3. Traditional presentation of ubi seduwang in a basket before packaging improvements
Source: Field study, 2023



Figure 4. Improved packaging of herbal products, illustrating adaptation to more formal market presentation
Source: Field study, 2023



Figure 5. Herbal product packaging with price labels and usage information
Source: Field study, 2023

existence of livelihood opportunities, but it does not provide a systematic estimate of household income, market size, or long-term ecological sustainability.

JAKOA Support, Entrepreneurship and Market Constraints

JAKOA support was visible in training, infrastructure, exhibitions, and entrepreneurship opportunities. Informants described courses on preparation, cleanliness, packaging, promotion, and marketing. The resulting packaging changes are visible in the field images (Figures 6 and 7), and some marketing was conducted through WhatsApp where internet access is allowed. This indicates that institutional support can strengthen the community's capacity to adapt traditional products to contemporary markets.



Figure 6. Packaging is produced after skills and marketing training
Source: Field study, 2023



Figure 7. A later packaging design used for Temiar herbal products
Source: Field study, 2023

Institutional support, however, did not remove all market constraints. JAKOA-linked shop facilities (Figure 8) were described as affordable, but one herbal shop was reported to have low customer traffic because of its location. IR3 stated:

> JAKOA gave me a shop near Kuala Betis, rent RM30 a month, plus utility bills. I didn't sell there because there were no buyers. In a month, I could barely make RM50. I would stay there all day, but I wouldn't even make RM1. (IR3)

This account shows why infrastructure provision must be evaluated together with location, demand, transport, and digital connectivity. The existence of a shop does not guarantee livelihood sustainability.

Exhibitions and entrepreneurship carnivals (Figure 9) created a different market channel. IR3 described JAKOA support for accommodation, meals, and participation costs and reported a strong sales outcome during a Putrajaya carnival.



Figure 8. Traditional herbal medicine shop provided as an entrepreneurship facility; informants reported location-related market constraints
Source: Field study, 2023



Figure 9. Informants marketing herbal products at an entrepreneurship carnival
Source: Field study, 2023

This is useful for contextual evidence of commercial opportunity, although the amount represents one reported event rather than a general or average income measure.

> At the JAKOA entrepreneurship carnival, we get RM50, and they cover hotel accommodations and meals. JAKOA sets the price, organizes everything, but we sell ourselves. Prices go up a little, about RM5. Grandma sold in Putrajaya and made RM3000… (IR3)

Cultural Boundaries: Sacred Sewang and Public Performance

The findings also show that not every cultural practice is suitable for commercialisation or ecotourism. Medical sewang and death sewang were described as sacred and connected to chants, taboos, spiritual meanings, and restrictions on participation. The field analysis therefore indicates that these forms should not be promoted as tourist products. This distinction is a central sustainability finding because it demonstrates community-defined limits to adaptation.

Performance sewang is different. It is used for entertainment, welcoming visitors, competitions, or public cultural presentations and does not carry the same sacred restrictions. IR6 described a recent public performance:

> Recently, we performed sewang in Gua Musang; the Teranek village group won. We performed sewang for fun. (IR6)

The Kampung Teranek group representing the Temiar community at RPS Kuala Betis won first place in a traditional dance category at a 2023 Orang Asli sports carnival in Gua Musang (Figure 10). This supports the potential of performance sewang as a culturally appropriate public-facing activity, provided that the distinction from sacred healing sewang remains clear.



Figure 10. Kampung Teranek Temiar performance sewang group after winning a 2023 traditional dance competition; performance sewang is distinct from sacred healing sewang
Source: Field study, 2023

DISCUSSION

From Preservation to Community-led Adaptive Sustainability

The findings support a shift from a static idea of preservation to an adaptive understanding of sustainability. Temiar traditional medicine is not sustained by isolating it from modern life. It is sustained through selective decisions about what to retain, what to modify, and what to protect. The use of clinics alongside sewang, improved herbal packaging, participation in carnivals, and the separation of sacred from performance sewang all demonstrate continuity through change.

This pattern is consistent with the broader argument that Indigenous and local knowledge systems are dynamic rather than frozen in the past (Fernández-Llamazares et al., 2021; Turner et al., 2022). The Temiar case adds an ethnographic mechanism to that discussion: adaptive continuity operates through plural healing, practice-based learning, commercial innovation, institutional support, and culturally defined limits. These mechanisms together form the paper's theoretical contribution, described here as community-led adaptive sustainability.

The same perspective clarifies the meaning of cultural resilience. Resilience is not measured by whether every historical practice remains unchanged. Instead, it is visible in the community's capacity to maintain meaningful relationships, knowledge, identity, and choice under changing conditions. Importantly, the finding that sacred medical and death sewang should not be converted into tourism products shows that successful adaptation may also involve refusal and boundary-setting.

Intergenerational Learning and Communities of Practice

The distinction between oral and practical transmission becomes analytically stronger when interpreted as situated learning. Lave and Wenger (1991) explain that newcomers learn through participation in shared practice with more experienced members. In RPS Kuala Betis, accompanying an elder to collect herbs, observing processing, helping with packaging or online sales, and learning sewang-related preparation are not incidental activities; they are the social settings in which knowledge becomes embodied. This suggests that community-led learning programmes should not rely only on classroom-style documentation. They should create supported opportunities for younger people to participate with knowledge holders in real cultural and livelihood practices.

Biocultural Knowledge, Community Authority and Decolonial Relevance

The Temiar case also illustrates why biocultural knowledge cannot be separated from the authority of knowledge holders. Contemporary work on Indigenous cultural health and wellbeing emphasises that culture, identity, community relationships, and health are closely connected (Biles et al., 2024). A sovereignty perspective further suggests that interventions are more

appropriate when Indigenous communities retain decision-making authority (Joseph, 2024). For this study, that means policy and tourism programmes should not treat traditional knowledge as an unrestricted cultural resource. Community consent, control over representation, and protection of sacred knowledge are integral to sustainability, consistent with decolonial research principles (Nakata, 2007; Smith, 2012).

Comparison with Previous Orang Asli Research and Novelty

Previous studies have established important foundations: Syuhana Khalid (2014) discussed JAKOA's role in preserving Orang Asli traditional knowledge; Rosnon et al. (2018) examined acculturation and consumerism; Ahmad Khairuddin and Hanafiah (2021) analysed cultural change among Temiar at another settlement; and Jalaludin and Abdullah (2020) documented changes in siwang ritual among the Semai. Lokman et al. (2024) focused specifically on Temiar herbal remedies and their economic/ecotourism potential at RPS Kuala Betis. The novelty of the present study lies in integrating these dimensions: it treats herbs and sewang as parts of one sustainability system and identifies the interaction among intergenerational learning, hybrid health choices, commercial adaptation, institutional support, and cultural safeguards.

CONCLUSION

The Temiar community at RPS Kuala Betis sustains traditional medicine through a combination of continuity and selective adaptation. Knowledge is transmitted orally and through participation; biomedical services and traditional practices can coexist; herbal products are adapted through packaging, marketing, and institutional support; and performance sewang can be shared publicly while sacred forms remain protected. These findings answer the research aim by showing that sustainability is produced through several interacting strategies rather than a single preservation activity. The study's main analytical contribution is the concept of community-led adaptive sustainability: traditions remain relevant when communities can selectively innovate while retaining authority over knowledge, practice, and cultural boundaries. For policy makers and support agencies, this means that heritage, health, tourism, and livelihood initiatives should strengthen community capability and intergenerational transmission without converting culturally restricted knowledge into a commodity. Future multi-site and longitudinal research is needed to assess the broader applicability, economic outcomes, and ecological sustainability of these strategies.

IMPLICATIONS OF THE STUDY

For the Orang Asli community, the strongest practical implication is the value of community-led transmission. Programmes can support elder-youth apprenticeships, family-based forest learning, herbal preparation, culturally appropriate documentation, and opportunities for

younger people to participate in marketing or performance activities. Such programmes should be designed with knowledge holders and should allow the community to decide which knowledge can be documented or shared. Related work in Kelantan shows that strategic planning to build social trust in technical and vocational education and training (TVET) is important for Indigenous youth, suggesting that skills and entrepreneurship programmes should be designed in ways that are locally trusted, culturally responsive, and relevant to youth aspirations (Azizan et al., 2024).

For JAKOA and other programme designers, the findings indicate that entrepreneurship support should combine training with market access, digital connectivity, suitable locations, and follow-up evaluation. The reported difficulty of operating a low-traffic shop illustrates that infrastructure without demand may have limited impact. Exhibitions and carnivals can widen exposure, but future programmes should also assess income stability, production capacity, ecological harvesting limits, and benefit distribution rather than relying only on event-level sales.

For heritage policy, the study supports the safeguarding of traditional medicine and performance knowledge as living, community-based heritage under the broader intent of the National Heritage Act 2005. Safeguarding should prioritise transmission and community control rather than only display or documentation. Where herbal products or healing services enter formal commercial or health settings, engagement with applicable safety, quality, and T&CM regulatory requirements is also important.

The findings are relevant to Malaysia MADANI because sustainability and wellbeing are linked here to local wisdom, respectful cultural continuity, and community capability. They also speak to SDG 3 by highlighting culturally meaningful dimensions of health and wellbeing, and to SDG 11.4 by demonstrating the importance of protecting living cultural heritage. These policy links should not be interpreted as proof of clinical effectiveness of particular remedies; the study contribution is social, cultural, and policy-oriented rather than biomedical.

LIMITATIONS AND FUTURE RESEARCH

This study is a qualitative, single-site ethnography, and the findings should not be generalised statistically to all Temiar or Orang Asli communities. Informants were selected for their relevant knowledge, experience, and community or institutional roles, which is appropriate for obtaining information-rich accounts but limits population-level inference. A complete age distribution was not systematically reported for all 22 informants. The study also does not provide systematic estimates of the number of active practitioners, frequency of treatment use, household income from herbal products, or the ecological sustainability of harvesting. Reported sales values are event-specific accounts rather than a longitudinal economic dataset.

The researcher's presence and interpretation may also shape ethnographic

data. Future work should therefore make researcher positionality more explicit and, where possible, incorporate community co-analysis or community review of interpretations. Comparative research across Temiar settlements and other Orang Asli groups could test whether the mechanisms identified here recur in different social and ecological settings. Longitudinal studies could examine changes in youth participation, knowledge transmission, market outcomes, and resource availability. Separate biomedical or pharmacological research would be required to assess the efficacy and safety of specific herbal remedies; such work should follow ethical, consent, and benefit-sharing principles appropriate to Indigenous knowledge.

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Integrated Model of Volunteerism for Youth Empowerment and Development in Malaysia

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ABSTRACT

Volunteerism is an important platform for youth empowerment and development, providing opportunities to develop personal competencies, social responsibility, leadership, and civic engagement. Previous studies have largely examined motivation, satisfaction, environmental influences, and participation constraints as separate predictors of volunteer involvement. However, limited attention has been given to how these factors operate simultaneously within an integrated framework, particularly the role of constraints in youth participation. To address this gap, this study develops an integrated model of youth involvement in volunteerism for youth empowerment and development in Malaysia by integrating the Motivation Model and the Leisure Constraints Model. A quantitative research design was employed using a structured questionnaire administered through a face-to-face survey involving 400 university student volunteers from selected public universities in Malaysia. Hierarchical multiple linear regression analysis showed that motivation ($\beta = 0.42$, $p < 0.05$), satisfaction ($\beta = 0.18$, $p < 0.05$), and environment ($\beta = 0.15$, $p < 0.05$) significantly influenced involvement in volunteerism. Constraints also significantly influenced volunteer involvement ($\beta = 0.14$, $p < 0.05$), while motivation did not significantly influence constraints. The study contributes to existing research by integrating involvement factors and constraints within a single explanatory model. The findings provide empirical guidance for public agencies, voluntary organisations, and other stakeholders in designing volunteer programs that promote sustained youth participation, empowerment, and development.

Keywords: Constraints, environment, motivation, satisfaction, volunteering involvement model, youth development, youth empowerment

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INTRODUCTION

The United Nations (UN) recognises youth human capital development as an important component of the 2030 Agenda for Sustainable Development, particularly in advancing inclusive economic, social, and environmental development. Youth are regarded as agents of change, future leaders, and important contributors to societal development. Consequently, youth empowerment requires more than formal education; it also involves opportunities to develop leadership, communication, social responsibility, civic awareness, and other competencies necessary for meaningful participation in society. Within this context, volunteerism provides an important experiential platform through which young people can develop these competencies while simultaneously contributing to community well-being (Meemaduma & Booso, 2022). In Malaysia, youth volunteerism is aligned with the Youth Development Agenda 2030, which emphasises inclusive youth development, capacity building, leadership, and participation in national development (Mokhzan et al., 2023). It also supports broader Sustainable Development Goals by enabling youth to contribute to community well-being while strengthening their social awareness and leadership capacity (Thomas & Ghazali, 2024).

However, recognising the developmental value of volunteerism does not necessarily explain why young people participate actively, remain involved, or experience difficulties in sustaining their participation. Youth involvement in volunteerism is shaped by multiple and potentially interacting factors. Motivation may encourage initial participation, satisfaction derived from the volunteering experience may influence continued involvement, and social and environmental support may facilitate participation. At the same time, youth may encounter intrapersonal, interpersonal, and structural constraints, including personal limitations, social influences, financial considerations, transportation, distance, time, accessibility, and competing commitments. Consequently, examining positive involvement factors without simultaneously considering the constraints experienced by youth provides only a partial explanation of volunteer participation.

Previous studies have established the importance of several determinants of youth volunteerism. Motivation has consistently been identified as an important factor influencing participation (Gage III & Thapa, 2011; Hamzah et al., 2015), while satisfaction with volunteering experiences is associated with stronger commitment and continued involvement (Finkelstien, 2009; Zhou & Kodama Muscente, 2022). Social and environmental influences, including family members, peers, educators, and social networks, can further encourage young people to volunteer (Pastorelli et al., 2021). Conversely, intrapersonal, interpersonal, and structural constraints may restrict opportunities or willingness to participate (Gage III, 2009; Samnegard, 2011).

Despite these contributions, the literature remains relatively fragmented because involvement factors and participation constraints are frequently examined

separately or primarily through their direct relationships with volunteer participation. This leaves an important conceptual gap in understanding how motivation, satisfaction, environmental influences, and constraints operate collectively in explaining youth involvement in volunteerism. More specifically, limited attention has been given to whether constraints intervene in the relationships between involvement factors and actual volunteer participation. Such integration is important because strong motivation or a supportive social environment may not necessarily translate into active participation when young people simultaneously encounter substantial barriers.

A further theoretical limitation is that the Motivation Model and the Leisure Constraints Model offer complementary but distinct explanations of participation. The Motivation Model explains how individual needs and expected outcomes stimulate behaviour and satisfaction, whereas the Leisure Constraints Model explains how intrapersonal, interpersonal, and structural barriers may restrict participation. Examining either perspective independently therefore provides an incomplete account of youth volunteer involvement. Integrating these perspectives allows participation to be understood as an outcome of both facilitating and constraining forces rather than as a consequence of motivation alone.

Accordingly, this study aims to develop an integrated model of youth involvement in volunteerism for youth empowerment and development in Malaysia by combining the Motivation Model (Mannell & Kleiber, 1997) and the Leisure Constraints Model (Crawford et al., 1991). Specifically, the study examines the influence of motivation, satisfaction, and environmental factors on youth volunteer involvement, evaluates the influence of these factors on participation constraints, and determines the role of constraints in explaining volunteer involvement. By integrating these variables within a single empirical model, this study seeks to provide a more comprehensive explanation of youth volunteer participation and to generate evidence that can inform the design of more supportive and sustainable youth volunteer programmes in Malaysia.

LITERATURE REVIEW

Volunteerism and Youth Involvement in Volunteerism

Volunteerism is not a new phenomenon in society, as its existence dates to the formation of civilisations and the early development of communities. The history of volunteerism across countries does not differ significantly, as the initial motivation to volunteer often stemmed from religious obligations and a strong desire to help others (Awang Noh et al., 2024). Volunteerism has emerged in every society in various forms, depending on the history, ideology, politics, socioeconomic conditions, and culture of a given nation. In contemporary times, volunteerism has become more global in nature, transcending national, cultural, religious, and societal boundaries (Rochester, 2006).

According to Bahari (2016), volunteerism consists of three essential components: voluntary work, volunteers,

and the voluntary sector. Voluntary work refers to actions, services, or activities carried out on a voluntary basis. Volunteers are individuals or groups who engage in such voluntary efforts. Meanwhile, the voluntary sector encompasses associations or voluntary organisations including groups, networks, alliances, and movements involved in voluntary activities. The definition of volunteerism used today is formed through the combination of these three components. However, confusion and ambiguity often arise in defining volunteerism (Rochester et al., 2006).

According to a report by the Ministry of Youth and Sports (KBS), the number of youths registered as volunteers is estimated to have exceeded one million individuals (Ismail et al., 2014). Wilson (2000) argues that the spirit of volunteerism is one of the core values that must be nurtured among the younger generation, as they will ultimately determine the progress or decline of a nation. Youth are an important population in volunteerism because their participation contributes to personal development while strengthening their capacity to contribute to society. Volunteer activities provide opportunities to develop communication, problem-solving, teamwork, leadership, and career-related competencies (Luque-Suárez et al., 2021). As future leaders and agents of change, youth can also influence their peers and contribute to broader community and national development (Gombe et al., 2015; Smith, 2021; Udoma et al., 2024).

Motivation in Volunteerism

Motivation plays a crucial role in determining youth volunteers' involvement and achievement in voluntary activities (Yanto et al., 2012). Youth participation in volunteering is driven by various motives, whether self-oriented or focused on helping others. Broadly, there are two main categories of motivation that drive youth volunteering engagement: altruistic motivation and egoistic motivation. However, changes in societal lifestyles and modernisation have led to the emergence of a blended motivational pattern that combines both altruistic and egoistic elements.

Altruistic motivation refers to the natural inclination of volunteers to engage in volunteer activities without being influenced by external pressures (Ryan & Deci, 2000). Fundamentally, altruism is associated with a strong internal drive to help others, where volunteers are willing to sacrifice their time, energy, resources, and expertise to support those in need. On the other hand, egoistic motivation refers to behaviours or actions aimed at obtaining psychosocial benefits from volunteerism, such as career advancement, social connections, personal development, skills acquisition, and more (Abdul Kadir et al., 2024). Voluntary engagement that prioritises self-interest is influenced by egoistic motivation, even if such involvement also brings benefits to others (Gage III & Thapa, 2011).

Changes in human lifestyle and modernisation have also transformed the motivations behind voluntary engagement,

making it difficult to determine whether participation is driven by a single factor. Numerous past studies have demonstrated the existence of both altruistic and egoistic elements influencing volunteers' involvement in voluntary activities (Gage III & Thapa, 2011; Hustinx et al., 2010). Most scholars agree that volunteer participation is not solely influenced by a single type of motivation, but rather a combination of altruistic and egoistic motives (Gage III & Thapa, 2011). This combination of motivations can be observed through the instrument developed by Clary et al. (1998), known as the Volunteer Function Inventory (VFI), which outlines six dimensions of volunteer motivation (refer Table 1). Among these six functions, the 'Understanding' dimension is considered the most influential in driving youth volunteer engagement. This aligns with the nature of youth, who are generally eager to explore, learn new things, and challenge themselves to reach their full potential. Acquiring new knowledge and skills is essential for young volunteers, serving as added value to their personal development and future career progression.

Satisfaction in Volunteerism

Satisfaction generally refers to the extent to which an individual's expectations are fulfilled (Gage III, 2009). An individual is more likely to continue volunteering if they possess high motivation, are satisfied with the benefits gained, and derive maximum satisfaction from their involvement (Zhou & Kodama Muscente, 2022). Volunteers who receive benefits aligned with their motives

Table 1
VFI dimension

VFI Dimension	Definition
Values (Altruistic)	Values (Altruistic) - The desire to help others in need. Student volunteers believe their involvement can contribute to the well-being of others. This value-driven motivation is associated with altruism and humanitarianism.
Understanding (Egoistic)	The desire to learn something new and apply existing skills and knowledge. This motivation allows student volunteers to identify and explore their strengths while gaining a deeper understanding of societal issues.
Social (Egoistic)	The desire to improve social interaction, strengthen relationships, and receive social support through volunteer activities. Volunteering serves as a platform for student volunteers to meet new people and expand their social networks.
Protective (Egoistic)	The desire to protect one's self-esteem by reducing negative feelings such as guilt for being more fortunate than others. Volunteering becomes a means of resolving internal conflict or coping with personal stress, offering a way to alleviate guilt by helping the less fortunate.
Career (Egoistic)	The desire to build and explore future career opportunities and enhance job prospects.
Enhancement (Egoistic)	The desire for personal and psychological development. Individuals motivated by enhancement functions engage in volunteer activities to feel important and needed by others.

for engaging in voluntary activities not only experience satisfaction but are also more inclined to remain as long-term volunteers (Finkelstien, 2009).

The attainment of high levels of satisfaction is also reflected in the volunteers' activeness in such activities. This implies that individuals are more likely to participate frequently and actively in voluntary work if they are satisfied with the outcomes of their involvement (Ryan et al., 2001). According to Ryan et al., active volunteers tend to have more social connections and consider volunteerism as an enjoyable activity. Active volunteers are more likely to show strong commitment in carrying out tasks and, consequently, produce high-quality work (Martinez & McMullin, 2004). This statement is consistent with the findings by Mohd Ghazali et al. (2006), who found that youth volunteers often engage in voluntary activities because they are satisfied with their experience. Volunteerism is a healthy activity that provides numerous benefits to individuals, communities, and the nation (Tran, 2016). Active participation in volunteerism offers both short-term and long-term benefits to volunteers (Whillans et al., 2016). The satisfaction factor is closely related to the benefits gained through participation in voluntary activities. Volunteer satisfaction reflects the extent to which expectations and motives are fulfilled through volunteering experiences (Gage III, 2009). Volunteers who perceive that their experiences meet their motivations are more likely to demonstrate stronger commitment, active participation, and intention to remain involved (Finkelstien, 2009; Ryan et al., 2001; Zhou & Kodama Muscente, 2022). Thus, satisfaction represents an important factor in both the intensity and continuity of volunteer participation.

Environment in Volunteerism

The environment has a great influence on individuals to be involved in volunteerism. (Hamzah et al., 2015). The process of socialisation from the environment forms self-confidence and influences youth's behaviour towards volunteerism. Reinforcement of positive values and perceptions from the environment towards volunteerism increases youth motivation to engage in voluntary activities actively (Pastorelli et al., 2021). Cultivating the spirit of volunteerism needs to be implemented early to make volunteerism as a culture and commonplace in students' lives, further maintaining involvement for a long time. Youth tend to be involved in voluntary activities for an extended period if their close friends or family members participate in volunteering activities (Pastorelli et al., 2021). According to Sahri et al. (2013), friends have a dominant influence over family members in encouraging youth to be involved in voluntary activities. The lifestyle of youth who like to be in groups (sociable) and mix with many acquaintances affects their behaviour and thinking patterns.

In academia, there are teachers or lecturers who also play an essential role in encouraging youth participation in voluntary activities. Holdsworth (2010) even believes that teachers or lecturers have a more significant influence on youth than parents in participating in voluntary activities.

Most youth who study in university are forced to migrate and live far away from their families. As a result, parents' control or influence on youth decreases as youth spend a lot of time with their friends and lecturers. The influence of teaching staff is also reflected in the fact that most youth participate in voluntary activities during their school years. This shows that teachers can be the primary motivators for youth participation in voluntary activities. A study by Ibrahim et al. (2015) found that most youth volunteers (86%) reported being involved in voluntary activities before their studies, and youth volunteers (43%) reported continuing to volunteer after high school. However, research by Gage III and Thapa (2011) demonstrates that parents can still persuade children to participate in voluntary work. According to the findings, parents were the primary motivators for most youth volunteers (40.2%), who also cited teachers (23.4%), friends (15.9%), members of their religion (11.2%), members of organisations and societies (6.5%), and others (2.8%). However, the researcher believes that every group in society whether parents, family members, friends, teachers, politicians, members of the clergy, or community members- plays a part in influencing the civic behaviours of volunteers and works together to do so.

Constraints in Volunteerism

Constraints may affect the involvement of youth volunteers in voluntary activities. The decline in the participation and inactivity of youth volunteers in voluntary activities is linked to certain constraints that are caused by individuals or their environment (Samnegard, 2011). A constraint means something that prevents or limits youth volunteers from engaging in voluntary activities (Gage III, 2009). Three types of constraints are based on the Leisure Constraint Model introduced by Crawford et al. (1991): intrapersonal, interpersonal, and structural. Intrapersonal constraints are psychological barriers and attitudes within an individual (health problems, depression, stress, and others). Interpersonal constraints refer to barriers involving relationships or interactions with other people. A hostile environment (negative perception or response) affects youth's voluntary involvement. Structural constraints refer to external factors that students cannot avoid, such as financial factors, distance, transportation, time, opportunities, accessibility, and others. To deal with the constraints, motivational elements should be examined together with the constraints. If the youth's motivation exceeds the constraints, then the youth will choose to be involved in voluntary activities. But if the constraints exceed motivation, the youth will decide not to participate in the activity. This means that involvement in volunteerism depends on the youth's ability to balance between constraints and motivation.

Hypotheses Development

H_1 : Involvement factors (motivation, satisfaction and environment) positively influence youth involvement in volunteerism (Figure 1).

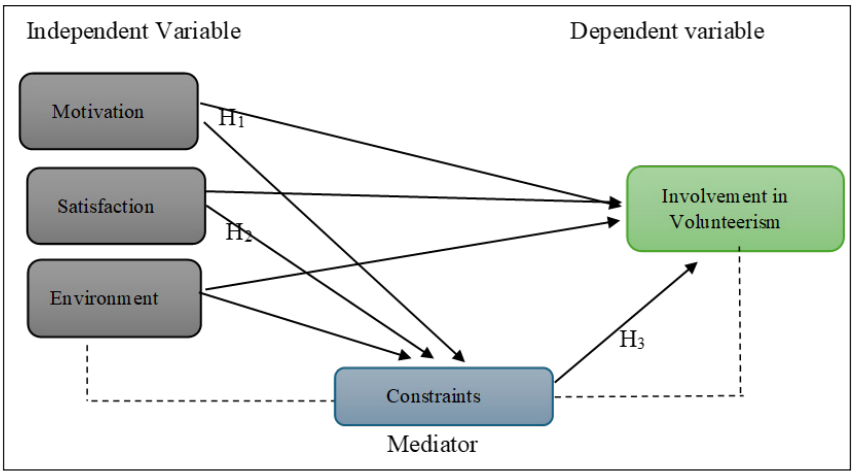

Figure 1. Hyphoteses development
Source: Authors' own work

H_2 : Involvement Factors (Motivation, Satisfaction, and Environment) positively influences constraints in volunteerism (Figure 1).

H_3 : The influence of constraints on youth involvement in volunteerism (Figure 1).

Underpinning Theories

Motivation Model

According to Mannell and Kleiber (1997), the motivational model comprises four main components. First, needs or motivation. Second, behaviour or activity. Third, goals or satisfaction. Fourth, feedback. Based on the Motivational Model, motivation refers to the factors that drive youth to perform a particular action or engage in a specific activity.

Motivation occurs in two ways. First, through a state of imbalance that leads to a desire among youth to correct this imbalance. This imbalance may be physiological or psychological in nature. Second, when youth recognise and believe that a certain action can help to resolve this imbalance. For instance, youth may believe that volunteerism provides various benefits that contribute to their overall personal development. Once this belief is established, they are likely to act to fulfil that motivation or need. For example, youth will decide to participate in voluntary activities if they genuinely believe that such activities can meet their needs. Once they engage in a suitable activity, the benefits or level of satisfaction will be emphasised. This means that if the volunteer activity fulfils their motivations or needs, youth will feel satisfied and demonstrate positive feedback, which can lead to their continued involvement or recommending the activity to others. Conversely, if the activity does not fulfil their motivation or need, youth will show negative feedback and may choose to disengage and not recommend the activity to others.

Leisure Constraints Model

The Leisure Constraints Model introduced is used to explain the barriers that exist in volunteerism. There are three types of constraints in this model: intrapersonal constraints, interpersonal constraints, and structural constraints. However, according to Jackson et al. (1993), the barriers to volunteerism are challenges that can be overcome. To address these constraints, motivational elements must be considered alongside the barriers. If youth motivation exceeds the constraints, they will choose to participate in volunteer activities. Conversely, if the constraints outweigh motivation, youth will decide not to engage in such activities. This indicates that participation in volunteerism depends on the ability of youth to balance constraints and motivation (Jackson et al., 1993).

METHODOLOGY

A quantitative strategy was adopted by employing survey methods using structured questionnaires as the primary study instrument to accomplish the research objectives. The population of this study is composed of volunteers among students involved in selected student associations' voluntary activities at all public universities in Malaysia. According to the Ministry of Youth and Sports (KBS), the youth age cohort refers to individuals between the ages of 15 and 40. Therefore, university students are also included within the youth category. According to Hussin and Mohd Arshad (2012), university students represent the largest group participating in voluntary activities compared to other youth age cohorts. In line with this, the present study selects university students as the respondents.

In this study, the researcher chose only one association from three public universities, namely SEKRUM (UM), Kelab Penyayang (UKM), and Kelab Penyayang (UPM). The selection of the sample is based on the student voluntary membership in the association, which is composed of 284 people (SEKRUM), 250 people (Kelab Penyayang UKM), and 200 people (Kelab Penyayang UPM). Simple random sampling was used to choose research participants based on their affiliation with the student association. Based on the results shown in Table 2, a total of 134 respondents, which constitutes 47% of the association's membership, were selected from the SEKRUM association; 133 were chosen for the Kelab Penyayang UKM, which is equal to 53%; and 133 were selected for the Kelab Penyayang UPM, which is equivalent to 66%. This indicates that a total of 400 students were selected to participate in voluntary activities.

Table 2
Number of population and sample study

Association	Association Membership	Respondent
SEKRUM	284	134
Kelab Penyayang UKM	250	133
Kelab Penyayang UPM	200	133
Total	734	400

Source: Authors' own work

The study uses Hierarchical Multiple Linear regression analysis through SPSS software to develop a model. In this study, four levels of regression analysis need to be implemented (refer to Table 3). First, the analysis will measure the relationship between the independent variables (motivation, satisfaction, and environment) and the dependent variable (involvement level), which is called relationship (a). Second, the regression analysis involves the independent variables (motivation, satisfaction, and environment) with the mediator variable (constraints) and is named as relationship (b). Third, regression analysis involves the mediator variable (constraints) and the dependent variable (involvement) named as relationship (c). Fourth, regression analysis involves independent variables (motivation, satisfaction, and environment), mediator variables (barriers), and dependent variables (involvement) named as relationship (d). Table 3 details the four stages of the analysis.

In the hierarchical multiple regression analysis, there will be three effects: the direct effect, the indirect effect, and the total effect. The calculation of the value of the direct effect, indirect effect, and total effect is based on the following calculation formula:

i. Direct effect - The direct effect value is obtained by looking at the relationship (a) between the independent variable (motivation, satisfaction, and environment) and the dependent variable (involvement)
   Direct effect = (a)

ii. Indirect effect - The indirect effect value is obtained by multiplying the value of relationship (b) (motivation, satisfaction, environment, and constraints) with relationship (c)

Table 3
Hierarchical multiple linear regression analysis

Level	Analysis	Visual
Stage 1	Testing the effect of the independent variable (involvement factors) with the dependent variable (involvement level)	**(a)** x → y
Stage 2	Testing the effect of the independent variable (involvement factors) with the mediator variable (constraints)	**(b)** x → m
Stage 3	Testing the effect mediator variable (constraints)with the dependent variables (Involvement level)	**(c)** m → y
Stage 4	Testing the effect dependent variable (involvement factors) and mediator variable (constraints) on the independent variable (involvement level)	**(d)** x, m, y

x (independent variable)
y (dependent variable)
m (mediator)
Source: Authors' own work

(constraints and involvement)

Indirect effect $= b \times c$

iii. Total effect - The total effect value is obtained by combining direct and indirect effect

Total effect $= a + b \times c$

RESULTS AND DISCUSSION

The Influence of Involvement Factors on Student Involvement in Volunteerism (relationship a)

The results found that the regression coefficient of the motivation factor (β=0.42, p<0.05) was significant, indicating that the motivation factor had a significant influence on the youth involvement in voluntary activities. Next, the regression coefficient values for the two involvement factors, namely satisfaction (β=0.18, p<0.05) and environment (β=0.15, p<0.05), are significant and show that these factors also affect youth involvement in voluntary activities (refer Table 4). Based on this analysis, the motivation factor is seen to be the main contributor to youth involvement in voluntary activities, followed by the satisfaction factor and the environmental factor.

The Influence of Involvement Factors (Motivation, Satisfaction, and Environment) on Constraints in Volunteerism (relationship b)

The discussion of this section is to measure the effect of the factors of involvement, namely motivation, satisfaction, and environment, on the constraints of volunteerism. The study's results show the value of the regression coefficient of the motivation factor (β=-.063, p>0.05), which is insignificant, indicating that the motivation factor does not significantly influence the constraints in volunteerism. Nevertheless, unlike the satisfaction factor, where the value of the regression coefficient (β=-.233, p<0.05) and the environment factor (β=0.33, p<0.05), which are significant, show that both factors have a significant influence on the constrains in volunteerism.

Based on the analysis results, there is no significant influence between motivational factors and a constraint in volunteerism. This shows that constraints impact or

Table 4
Coefficient of influence of involvement factors on youth involvement in volunteerism

	Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(constant)	.889	.244		3.636	.000
	Motivation	.335	.041	.422	8.240	.000
	Satisfaction	.165	.050	.184	3.322	.001
	Environment	.117	.035	.158	3.367	.001

a. Dependent variable: Involvement
Source: Authors' own work

Table 5
Coefficient of influence of involvement factors on constraints in volunteerism

	Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(constant)	4.453	.543		8.206	0.00
	Motivation	-.095	.098	-.063	-.971	.332
	Satisfaction	-.397	.118	-.233	-3.377	.001
	Environment	.477	.080	.339	5.978	.000

a. Dependent variable: Constraints
Source: Authors' own work

Table 6
The coefficient of the effect of constraints on the youth involvement in voluntary activities

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
Constraints	.074	.021	.141	3.491	.001

Dependent varible: Involvement
Source: Authors' own work

influence satisfaction and environmental factors only (refer to Table 5). Generally, an individual's motivation will decrease when an obstacle exists. However, based on *Leisure Constraints Model*, Jackson et al. (1993) stated that youth must balance motivation with constraints to volunteer. If the youth motivation exceeds the constraints, then the youth will choose to be involved in voluntary activities. However, if the constraints exceed motivation, then the youth will decide not to participate in the activity.

The Influence of Constraints on Involvement in Volunteerism (Relationship C)

The results of the study in Table 6 show the value of the regression coefficient of constraints ($\beta = 0.14$, $p<0.05$), which shows that constraints significantly influence youth involvement in voluntary activities. This proves that the existence of constraints affects youth involvement in voluntary activities. Based on the *Leisure Constraint Model* introduced by Crawford et al. (1991), constraints are divided into three: intrapersonal, interpersonal, and structural. The results of this study support this model, where these constraints limit youth involvement in voluntary activities.

Based on the results of the multi-hierarchical regression analysis, the researcher formed a structural model that shows the value of the direct effect, the indirect effect, and the total effect (Figure 2)

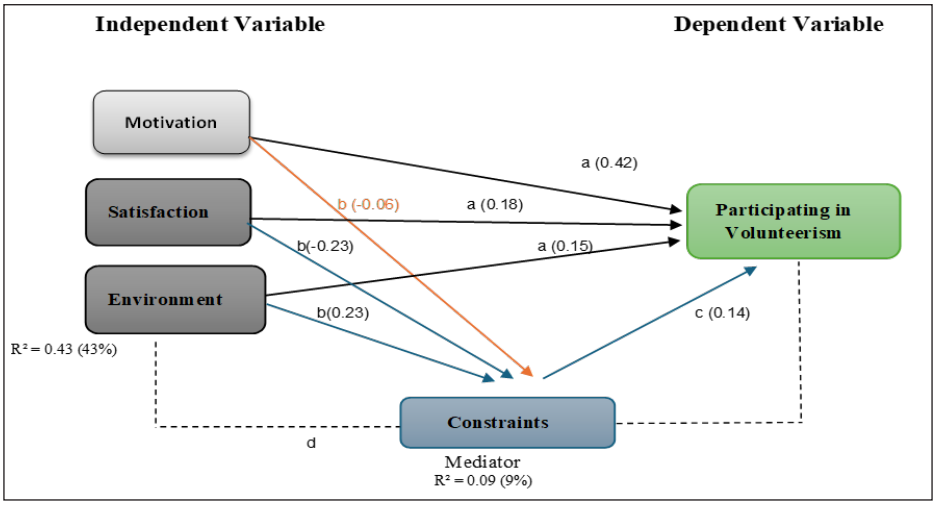

Figure 2. Integration model of involvement in volunteerism for youth empowerment and development
Source: Authors' own work

a. The direct effect involves involvement factors with the student's involvement in voluntary activities (relationship a). The direct effect values are as follows:
   i. The effect of motivation on engagement = 0.42
   ii. Effect of satisfaction on engagement = 0.18
   iii. Effect of environment on engagement = 0.15

b. The indirect effect is [b × c]:
   i. Motivation (-0.06) × 0.14 = -0.0084
   ii. Satisfaction (-0.23) × 0.14 = -0.032
   iii. Environment (0.33) × 0.14 = 0.046

c. The overall effect is a + [b × c]:
   i. Motivation = 0.42 + [-0.06 × 0.14] = -0.4284
   ii. Satisfaction = 0.18 + [-0.23 × 0.14] = -0.216
   iii. Environment = 0.15 + [0.33 × 0.14] = 0.1

The results of the study show that the three factors of involvement, namely motivation, satisfaction, and environment, have significant relationships with youth involvement in voluntary activities. When constraints are included as mediator variables, the studies show that only the satisfaction and environment factors significantly influence the constraints in volunteerism. This indicates that constraints influence or affect the relationship between satisfaction factors and the environment on youth involvement in voluntary activities. However, motivational factors show that there is no significant influence on volunteerism. This means that constraints do not affect the relationship between motivation and the student's involvement in voluntary activities. Accordingly, the motivation factor was dropped as an independent variable for this study. Based on the structural model, youth involvement

in voluntary activities is contributed by the factors of motivation, satisfaction, environment, and constraints, which is as much as 43 percent. However, constraints are seen as the least contributor toward youth involvement in voluntary activities, which is only 14 percent. Although the value of the contribution is small, it gives impacts towards youth involvement in voluntary activities.

CONCLUSION

Theoretical Contributions

This study examines the factors that influence youth involvement in voluntary activities, as well as the impact of constraints towards the relationship between these involvement factors and youth involvement in volunteerism. The factors of involvement are analysed through three components: motivational factors, satisfaction factors, and environmental factors. Meanwhile, constraints act as a mediating variable in the relationship between the involvement factors and youth volunteer involvement in voluntary activities. The inclusion of constraints as a mediating variable sets out this study apart from most previous studies, which primarily focused on the direct relationship between involvement factors and youth involvement or commitment in volunteerism. The discussion and findings of this study offer added value and diversify the foundational data while providing a different perspective on youth volunteerism in Malaysia. Indirectly, this study also helps to fill existing data gaps, particularly those related to youth involvement in voluntary activities. Such data and information are crucial for enhancing the understanding of the current scenario of youth engagement in volunteerism more comprehensively.

The findings of this study contribute to strengthening and enhancing existing models such as the Motivation Model and the Leisure Constraints Model. The results align with the assumptions of the Motivation Model, which suggests that youth involvement in volunteerism is driven by specific needs and motivations. Youth who participate in voluntary activities have the expectation that such involvement will yield positive impacts for them due to their participation. Indeed, youth engagement in voluntary activities can significantly contribute to their overall development and empowerment.

However, the presence of constraints limits their ability to participate actively in volunteerism. The fundamental assumptions of this theory are further reinforced, as the findings also indicate that constraints are a key factor contributing to youth noninvolvement in voluntary activities. The Leisure Constraints Model introduced by Crawford et al. (1991) outlines three types of constraints: intrapersonal, interpersonal, and structural constraints. Generally, the greater the number of constraints, the lower the level of youth participation. Nevertheless, these constraints can be overcome if youth volunteers possess high levels of motivation to engage in volunteer activities. This corresponds with the Balance Model introduced by Jackson et al. (1993), which posits that high

motivation encourages youth to find the best initiatives or solutions to eliminate or reduce the constraints, thereby enabling them to participate in volunteerism.

IMPLICATION OF THE STUDY

The findings of this study provide several practical implications for public agencies, universities, voluntary organisations, and other stakeholders involved in youth volunteerism. These implications are directly informed by the empirical relationships identified between motivation, satisfaction, environmental factors, constraints, and youth involvement in volunteerism.

First, motivation emerged as the strongest predictor of youth involvement in volunteerism ($\beta = .422$, $p < .001$), compared with satisfaction and environmental factors. This finding suggests that strategies to strengthen youth participation should place greater emphasis on understanding and sustaining the different motives that encourage young people to volunteer. Volunteer programmes should therefore provide opportunities that correspond with both altruistic and personal development motives, such as contributing to community well-being, acquiring new skills, developing leadership competencies, expanding social networks, and gaining meaningful experiences. Providing volunteering opportunities that correspond with these motives may strengthen youth willingness to participate and remain actively involved.

Second, satisfaction significantly predicted youth involvement ($\beta = .184$, $p = .001$) and was also significantly associated with constraints ($\beta = -.233$, $p = .001$). These findings indicate that the quality of the volunteering experience is important in sustaining youth participation. Voluntary organisations should therefore pay greater attention to volunteer experience by providing appropriate task allocation, adequate support, recognition, constructive feedback, and opportunities for personal development. A positive volunteering experience may enhance satisfaction while helping young volunteers manage or perceive participation constraints more favourably.

Third, environmental factors significantly influenced youth involvement ($\beta = .158$, $p = .001$) and were also significantly related to constraints ($\beta = .339$, $p < .001$). This finding highlights the importance of creating a supportive social and organisational environment for youth volunteers. Universities and voluntary organisations can strengthen such environments through peer support, mentoring, supportive leadership, effective communication, and collaboration among students, educators, families, communities, and volunteer organisations. A supportive environment may facilitate participation while enabling organisations to identify and address contextual barriers experienced by young volunteers.

Fourth, constraints significantly influenced youth involvement in volunteerism ($\beta = .141$, $p = .001$), demonstrating that barriers remain relevant in explaining youth participation. Therefore, efforts to increase youth involvement

should not focus solely on strengthening motivation. Organisations should also identify and address intrapersonal, interpersonal, and structural constraints that may affect participation. Practical measures may include providing flexible volunteering schedules, improving accessibility to volunteer opportunities, facilitating transportation where possible, strengthening information and communication channels, and ensuring that volunteer tasks are appropriate to the abilities and circumstances of young participants.

Taken together, the findings demonstrate that strengthening youth volunteerism requires an integrated approach rather than interventions focusing on a single factor. The empirical model explained 43% of the variance in youth involvement in volunteerism, indicating that motivation, satisfaction, environmental support, and constraints collectively contribute to understanding youth participation. Accordingly, volunteer programmes should simultaneously strengthen the factors that encourage participation while reducing barriers that may restrict it. Such an approach can support more meaningful and sustained youth participation and enhance the contribution of volunteerism to youth empowerment and development.

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Preserving Heritage Through Integrated Marketing Communication: Enhancing Local Businesses and Tourist Interest in *Keris* Village

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ABSTRACT

Preservation *keris* culture is crucial as a symbol of the community's historical, artistic, and cultural identity. Integrated Marketing Communication (IMC) can be a new strategy for raising cultural awareness, maintaining heritage sustainability, and promoting socioeconomic benefits and inclusive growth for local communities. This study aims to: (1) explore how communication channels are integrated to deliver culturally relevant, consistent, and impactful messages; (2) examine informants' perceptions of the impact of IMC on tourist interest, *keris* heritage preservation, and craft product sales; and (3) identify the challenges stakeholders face in implementing IMC strategies. Using a qualitative approach, this study employed semi-structured interviews with 15 informants selected through purposive sampling, comprising five representatives each from the government, private sector, and local community. All informants had actively participated in IMC-related activities in *Keris* Village, Madura, Indonesia, in the past two years. The findings indicate that integrating communication channels facilitates the coordinated promotion of *keris* heritage and its cultural significance. Informants perceive IMC as contributing to increased tourist interest and economic benefits while supporting efforts to preserve and promote the *keris* as a cultural icon. However, key challenges include limited resources, insufficient understanding of communication integration, gaps in digital technology adoption, and difficulties in content creation and coordination across communication channels. This study highlights the importance of aligning IMC strategies with heritage preservation efforts to promote the long-term

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sustainability of *Keris* Village and foster inclusive local development. Findings reflect informants' perceptions not independently measured outcomes.

Keywords: Cultural sustainability, heritage preservation, integrated marketing communication, *Keris* Village, tourist interest

INTRODUCTION

Cultural heritage plays a crucial role in shaping societal identity (Spennemann, 2023). In Indonesia, the diversity of cultural heritage, expressed through art, traditions, and handicrafts, reflects the nation's long history and cultural richness, including its heritage associated with the *keris*. Some communities believe that the *keris* possesses a spiritual power that can protect its owner and ensure their safety (Zafri et al., 2023). Beyond its perceived spiritual significance, the *keris* serves as an integral element in various traditional ceremonies and historical events across the Indonesian archipelago. It is also distinguished by its unique design and profound symbolism.

Over time, the *keris* and other forms of cultural heritage have faced increasing threats, partly driven by the rapid pace of modernisation. Folorunso (2021) explains that globalisation has contributed to the destruction of cultural heritage properties over the past two decades. Despite its significant cultural and scholarly value, interest in the *keris* among younger generations has reportedly declined (Wibawa et al., 2024). This situation presents a particular challenge for villages that have long served as centres of *keris* craftsmanship and are deeply rooted in the historical tradition of *keris* making.

Aeng Tong-Tong Village, located in Saronggi District, Sumenep Regency, Indonesia, hereafter referred to as *Keris* Village, is widely recognised for its concentration of *keris* craftsmen (Anugerah et al., 2023). The village exemplifies the close relationship between cultural heritage, traditional craftsmanship, and community identity. It is recognised not only as a centre of *keris* production but also as a custodian of the knowledge, skills, and artistry associated with *keris* making, which have been passed down through generations. Despite its considerable potential for cultural heritage preservation, *Keris* Village faces several challenges that threaten the continuity of this tradition.

Within this context, Integrated Marketing Communication (IMC) offers a strategic approach to addressing these challenges. Rehman et al. (2022) describe IMC in terms of the holistic and strategic management of marketing communications. IMC aligns multiple communication channels to deliver consistent and impactful messages to target audiences. Its objectives include raising awareness, fostering interest, and encouraging audience engagement. In *Keris* Village, IMC may also create opportunities for local communities to develop their businesses by promoting *keris* products and other traditional crafts.

Through a coordinated communication strategy that incorporates social media, digital campaigns, cultural events, and partnerships with tourism stakeholders, the village can strengthen its public image and communicate its distinctive cultural identity more effectively.

Beyond its promotional function, the use of IMC for cultural heritage preservation requires an understanding of how local cultural resources can contribute to a sustainable community economy. Sustainable development encompasses economic, social, and environmental dimensions (Rahman et al., 2022). Economic sustainability concerns the capacity to maintain economic activity and long-term growth while taking account of its social and environmental implications. Cultural heritage can also serve as an economic resource by generating income and strengthening social capital (W. Ariffin et al., 2023). Consequently, integrating cultural preservation with local economic development can provide a basis for sustaining traditional practices while creating opportunities for community welfare.

Traditional crafts play an important role in expressing a country's culture and traditions while providing employment opportunities that may require relatively low levels of initial capital investment (Curkovic, 2021). Nevertheless, traditional crafts and craftsmanship as expressions of local cultural heritage face numerous challenges (Duan et al., 2023). In *Keris* Village, preserving and developing *keris*-making practices could support local enterprises, create employment opportunities, and strengthen the community's connection to its cultural roots. Accordingly, IMC may contribute to the development of new business opportunities in tourism and traditional craft production, while supporting the long-term sustainability of the local economy.

Achieving these objectives requires cooperation among government institutions, local communities, business owners, and tourism stakeholders in developing and implementing effective IMC strategies. Collaboration is closely connected to communication because its success depends substantially on the quality of knowledge sharing and the trust established among participating actors (Thornhill-Miller et al., 2023). In this context, communication can also encourage communities to understand and participate in government-led development programmes and initiatives (Arifin et al., 2025). Without effective collaboration and sustained support from relevant stakeholders, efforts to preserve cultural heritage and strengthen local enterprises in *Keris* Village may not achieve their full potential.

Given the importance of IMC in this context, an initial step is to identify potential gaps between audiences' expectations concerning the cultural significance of the *keris* and the messages they actually receive or understand. Understanding these gaps can help stakeholders design more focused and relevant communication strategies to convey the importance of *keris* heritage preservation. Existing literature on IMC has

predominantly examined its applications in marketing and tourism. However, Porcu et al. (2019) and Serie et al. (2015) indicate the potential for applying IMC in other contexts. This provides a basis for examining how IMC can be applied to cultural heritage preservation, particularly in traditional craft communities.

Accordingly, this study aims to: explore how communication channels are integrated to deliver culturally relevant, consistent, and impactful messages about *keris* heritage preservation; examine stakeholders' perceptions of IMC's influence on tourist interest, *keris* heritage preservation, and craft product sales; and identify the challenges stakeholders encounter in implementing IMC strategies in *Keris* Village, Aeng Tong-Tong, Sumenep Regency, Indonesia. In this study, tourist interest refers to informants' perceptions of tourists' curiosity about the village and their intention to visit. Tourist arrivals refers to informants' accounts of visits to the village, rather than independently verified visitor numbers. Tourist attractions refers to destination features that may draw visitors, particularly the *keris* and the village's associated cultural activities. These terms are used distinctly and are not treated as interchangeable concepts.

The contribution of this study is primarily empirical and practical rather than theoretical. Rather than proposing an extension of existing theoretical models of IMC, heritage studies, or cultural sustainability, the study provides a grounded, multi-stakeholder account of how IMC is understood and implemented in a traditional craft village. Its value lies in documenting the contextual dynamics of heritage communication in a setting that has received comparatively limited scholarly attention, thereby providing an empirical foundation for future conceptual and theoretical development. Specifically, the study contributes (i) an account of how stakeholders from three sectors perceive and navigate the balance between cultural authenticity and commercial promotion; (ii) an examination of communication challenges in a traditional heritage craft village, as reported by stakeholders; and (iii) context-specific practical implications for strengthening IMC practices in *Keris* Village.

LITERATURE REVIEW

Definition of Preserving Heritage

Heritage preservation is a systematic effort to protect, maintain, and pass on cultural, historical, and natural assets and values so that they remain meaningful for present and future generations. The understanding of heritage has evolved from a conventional historical perspective to a more inclusive approach, recognising the cultural expressions and experiences of groups previously underrepresented in dominant historical narratives (Nilson & Thorell, 2018). Cultural heritage encompasses traditions, beliefs, values, and knowledge that represent the collective identity, traditions, beliefs, and historical experiences of societies across generations (Qureshi et al., 2026).

Furthermore, heritage preservation requires an inclusive and participatory approach involving various stakeholders. Involving diverse communities allows for a more comprehensive representation of history and culture while strengthening equity in heritage management (Zhang et al., 2024). Preservation involving active community participation also contributes to social sustainability (Usmaedi et al., 2024). Furthermore, documenting and raising awareness for the preservation of this unique community's cultural heritage needs to be prioritised (Ghahramani et al., 2020). Thus, heritage preservation can be understood as a continuous process to protect heritage assets and values through protection, knowledge transmission, and inclusive community involvement. This approach not only maintains the existence of heritage but also strengthens collective identity and social sustainability across generations.

Challenges in *Keris* Heritage Preservation

The *keris* is a unique cultural heirloom that holds profound historical, philosophical, and spiritual significance across the Indonesian archipelago. It is a work of art that emerged from the creative inspiration of various ethnic groups across the archipelago and is characterised by intricate craftsmanship, high cultural value, and rich aesthetic elements (Yusof et al., 2022). Al-Mudra (2004) also emphasises that the *keris* represents a distinctive cultural heritage shared by communities across the Indonesian archipelago and Malaysia. Nevertheless, efforts to safeguard the *keris* face growing challenges, largely driven by modernisation and a shift towards more pragmatic, economically oriented ways of life.

Changes in societal values and priorities have contributed to declining engagement in *keris* production and heritage preservation. The expansion of modern economic activities can marginalise traditional cultural practices, creating significant obstacles for villages that have historically served as centres of *keris* craftsmanship. One factor contributing to the neglect of cultural heritage is the declining willingness of younger generations to engage with and inherit their ancestral traditions, a phenomenon influenced by globalisation (Nahak, 2019). Ullah and Ming (2021) further highlight how the long-term effects of globalisation can contribute to deculturation and the erosion of cultural identity, potentially leading to an identity crisis. Consequently, more comprehensive cultural preservation strategies are needed. These strategies should extend beyond conventional approaches by integrating contemporary and contextually appropriate communication tools and frameworks to ensure the long-term sustainability of *keris* heritage and facilitate the transmission of traditional knowledge and craftsmanship across generations.

Implementation of Integrated Marketing Communication

Integrated Marketing Communication (IMC) is a marketing-oriented approach that integrates the various communication and

marketing activities of an organisation into a coherent and consistent whole (Gordon-Isasi et al., 2021). In the context of tourism and cultural preservation, IMC plays an important role in shaping a compelling and distinctive image for cultural destinations such as *Keris* Village. According to Palazzo et al. (2021), IMC can contribute to economic and social development. Through integrated communication strategies, IMC can help raise public awareness, strengthen collaboration among stakeholders, promote cultural heritage, encourage local business development, and support heritage preservation.

IMC facilitates the delivery of coordinated and consistent messages across multiple communication channels (Kitchen & Burgmann, 2010). One of its key strengths lies in its ability to communicate the cultural significance of the *keris* through clear and consistent messaging, potentially enhancing its appeal to tourists. A coordinated communication strategy incorporating social media, partnerships with travel agencies, and cultural events may help increase tourist interest while introducing local crafts to wider audiences. The effective use of IMC has been recognised as an important means of achieving marketing objectives (Kushwaha et al., 2020). When implemented strategically, IMC can help promote the *keris* as a cultural artefact to wider national and international audiences while supporting efforts to preserve its cultural significance and generate economic opportunities for the local community. In this way, IMC can serve as a link between cultural heritage preservation and local economic development.

This study is particularly relevant given the limited research explicitly examining the application of IMC to cultural heritage preservation, particularly in traditional villages such as *Keris* Village. Rakhmawati et al., (2022) examined the *keris* as a basis for destination branding in Aeng Tong-Tong Village, Sumenep Regency, and highlighted its relevance to marketing communication research. This previous study provides a useful foundation for further investigation into the role of integrated communication in promoting traditional cultural heritage.

Although the studies reviewed above suggest that IMC can support destination visibility, tourist interest, and local economic activity, much of the existing literature approaches IMC primarily from a functional and managerial perspective. The application of IMC as a coordinated communication approach within small-scale, artisan-led traditional villages remains an area that warrants further investigation, particularly in relation to the interaction between cultural preservation and commercial promotion. This study addresses this research gap by examining how stakeholders from the government, private sector, and local community engage in IMC practices in *Keris* Village. Specifically, it explores how these stakeholders coordinate communication activities and navigate the balance between maintaining cultural authenticity and meeting the practical demands of tourism promotion and craft-product marketing.

METHODS

This study employed a qualitative research approach. Qualitative research can be defined as a systematic and subjective approach to describing and understanding lived experiences and interpreting their meanings (Delgado-Hito & Romero-García, 2021). A case study is a qualitative research design in which researchers investigate a programme, event, activity, process, or individual in depth (Priya, 2021). This study adopted a qualitative case study design to explore cultural heritage preservation and the implementation of Integrated Marketing Communication (IMC) in *Keris* Village (Aeng Tong-Tong Village), Madura, Indonesia, a centre of traditional *keris* craftsmanship associated with historical values, artistic expression, and community identity.

The case study approach enabled an in-depth examination of IMC implementation and communication dynamics among key stakeholders, including government institutions, the private sector, and the local community. Data were collected through semi-structured interviews with 15 informants selected using purposive sampling. The informants comprised five representatives from the government sector, five from the private sector, and five from the local community. They were selected based on their direct involvement in IMC-related communication and promotional activities associated with *keris* heritage preservation in *Keris* Village during the preceding two years. The interview guide was developed based on a review of literature on IMC and cultural heritage preservation, complemented by preliminary discussions with experts in communication and tourism.

Purposive sampling was employed to ensure that the selected informants possessed relevant, first-hand experience of IMC implementation in *Keris* Village. This sampling technique enabled the inclusion of stakeholders with direct knowledge of communication practices, promotional activities, and cultural heritage preservation initiatives. The interview data were analysed using thematic analysis to identify recurring patterns of meaning across the participants' accounts. This approach enabled the findings to be organised into themes corresponding to the research questions, including communication channel integration, stakeholders' perceptions of IMC, and challenges in implementing IMC strategies for cultural heritage preservation.

As shown in Table 1, the informants comprised government decision-makers, local entrepreneurs, and community members involved in IMC-related activities. None of the informants was identified as an active *keris* craftsman. Therefore, the experiences and challenges faced by *keris* craftsmen, as discussed in this study, reflect stakeholders' perceptions rather than the craftsmen's first-hand accounts.

The interview guide covered key topics related to the roles and contributions of different stakeholder groups in implementing Integrated Marketing Communication (IMC), the communication challenges encountered in promoting cultural tourism, and potential strategies for strengthening

Table 1
Demographic information of the informants

No.	Informants	Category	Position	Age
1	Informant 1	Government Sector	Decision maker	56
2	Informant 2	Government Sector	Decision maker	45
3	Informant 3	Government Sector	Decision maker	51
4	Informant 4	Government Sector	Decision maker	38
5	Informant 5	Government Sector	Decision maker	37
6	Informant 6	Private Sector	Local entrepreneur	45
7	Informant 7	Private Sector	Local entrepreneur	38
8	Informant 8	Private Sector	Local entrepreneur	48
9	Informant 9	Private Sector	Local entrepreneur	34
10	Informant 10	Private Sector	Local entrepreneur	37
11	Informant 11	Local Community	Local resident	25
12	Informant 12	Local Community	Local resident	31
13	Informant 13	Local Community	Local resident	23
14	Informant 14	Local Community	Local resident	27
15	Informant 15	Local Community	Local resident	39

Source: Authors' own work

collaboration to preserve *keris* heritage and support local economic development. Before its use, the interview guide was reviewed by two experts in communication and qualitative research to assess its content relevance and clarity. Their feedback was subsequently incorporated to improve the clarity, appropriateness, and contextual relevance of the interview questions.

The interviews were conducted in Madurese, the language familiar to the informants, with each interview lasting approximately 25-40 minutes. Data collection was conducted iteratively until thematic saturation was reached. After the tenth interview, no substantially new themes emerged. Nevertheless, five additional interviews were conducted to confirm the consistency, depth, and adequacy of the emerging themes. To protect the informants' privacy, confidentiality was maintained throughout the research process. With the informants' consent, the interviews were audio-recorded, transcribed verbatim, and subsequently translated from Madurese into Indonesian and then into English to facilitate analysis and reporting.

To preserve the original meanings conveyed by the informants, interview excerpts presented in this study were translated into English through a two-stage process. First, the original Madurese statements were translated into Indonesian and subsequently into English. Second, the English translations were reviewed for contextual accuracy to ensure that the intended meanings were retained. Idiomatic expressions were translated as closely



Figure 1. Map of Aeng Tongtong Village
Source(s): Google Earth (2026)

as possible to their original meanings rather than being reformulated into overly formal academic language. Informal and colloquial expressions were also retained wherever possible, provided that they did not compromise clarity, to represent the informants' voices more authentically.

The resulting themes were subsequently organised in accordance with the research questions to ensure analytical coherence and relevance. Semi-structured interviews constituted the sole source of empirical data analysed in this study. No systematic field observations were conducted or reported. Therefore, the findings were based exclusively on informants' accounts and perceptions rather than directly observed practices. The study was conducted after obtaining approval from the relevant Research Ethics Committee for research involving human participants. The geographical location of Aeng Tong-Tong Village is illustrated in the map (Figure 1).

RESULTS AND DISCUSSION

Culturally Relevant, Consistent, and Impactful Messages

The implementation of an integrated communication strategy in *Keris* Village, Aeng Tong-Tong, Sumenep Regency, aims to strengthen cultural heritage preservation while simultaneously promoting tourism development rooted in local cultural values. A key component of this strategy is the use of multiple, well-coordinated communication channels, including social media, advertising, sales promotion, and public relations. Integrating these channels is intended to deliver more coherent and consistent messages to a broader and more diverse audience. Informants' accounts suggest that an integrated communication approach can help address the challenges associated with using communication channels independently. In their view, uncoordinated communication often leads to inconsistent messaging, thereby reducing

its overall impact and effectiveness. By contrast, combining multiple channels is perceived to enable messages to be conveyed more clearly, purposefully, and accessibly to target audiences.

> …The coordinated use of various communication channels has proven crucial in ensuring that the message about cultural heritage preservation reaches the local community and a global audience. Effective communication strategies also foster stronger collaboration between local authorities, tourism agencies, and cultural institutions, amplifying the impact of the message… (Informant 1)

As noted by Informant 1, this approach highlights the crucial role of integrated communication in conveying the importance of cultural heritage preservation. In *Keris* Village, this strategy aims to strengthen the village's image as an attractive cultural tourism destination. Bolton et al., (2021) suggest that relationships characterised by shared goals, shared knowledge, and mutual respect tend to facilitate frequent, timely, and accurate communication focused on problem-solving, thereby enabling stakeholders to coordinate their activities more effectively. This strategy extends beyond message dissemination to include the development of a credible and sustainable destination image. Through coordination across different communication channels, messages about cultural heritage preservation and the potential of culture-based tourism can reach broader audiences at both local and international levels.

According to the informants, the primary strength of this approach lies in its ability to create synergy among different communication channels, thereby reinforcing the positioning of *Keris* Village as a cultural tourism destination. Effective coordination among these channels can help prevent inconsistent messaging that might confuse audiences and diminish the long-term impact of promotional activities. Furthermore, stakeholders emphasised the importance of coordination among the parties involved in strengthening the local system (Beltramo et al., 2021). From the informants' perspective, therefore, an integrated communication approach represents a potentially valuable strategy for supporting cultural heritage preservation while promoting the development of culture-based tourism in the region. Informan accounts provide specific examples of how coordination among stakeholders and communication channels is understood to operate. However, because these findings are based on interviews and no systematic observations were conducted, they reflect informants' understandings of stakeholder coordination rather than independently verified coordination practices.

The delivery of culturally relevant messages is also an essential component of efforts to communicate the significance of the *keris* as a symbol of local culture with profound historical and philosophical value. Messages about the *keris* should reflect the cultural values of *Keris* Village and convey the richness of its traditions, which have been preserved across generations. The aim is to help domestic and international

audiences understand the significance of the *keris* as an important element of the region's cultural heritage. Communicating these values effectively may foster an emotional connection with audiences while encouraging greater respect for and appreciation of the cultural legacy represented by the *keris*. As expressed by Informant 12, a member of the local community:

> …As members of the local community, we feel proud of the efforts to preserve the *keris* and our cultural heritage… (Informant 12)

Sensitivity to the local cultural context is also crucial when designing messages for broader audiences. Communicating content that reflects local cultural values can enrich audience experiences while helping to prevent misunderstandings and the loss of cultural meaning. In this way, communication can deepen audiences' understanding of *Keris* Village's cultural heritage while fostering a sense of pride and raising awareness of the importance of cultural preservation among both local communities and international visitors.

> …The challenge, of course, lies in ensuring that the message remains consistent and true to the village's heritage, but when we successfully align our communication efforts, the impact is undeniable… (Informant 8)

According to a representative from the private sector, consistency in message delivery across different communication channels plays an important role in building a strong and recognisable image among audiences. In the context of culture-based tourism development in *Keris* Village, consistent messaging helps promote *keris* products and the destination itself while reinforcing audiences' understanding of the cultural values associated with the *keris*. Maintaining consistent messages across communication channels can establish a clear and coherent identity, making it easier for audiences to recognise *Keris* Village as a destination characterised by distinctive and authentic cultural heritage.

Delivering messages that are both culturally relevant and consistent can help raise public awareness of the importance of safeguarding the *keris* as a valuable element of cultural heritage. Furthermore, informants expect that effectively communicated messages can increase tourist interest in visiting *Keris* Village as a cultural tourism destination. Thus, culturally relevant messaging may create opportunities for *Keris* Village to gain wider recognition, particularly among international audiences seeking authentic cultural experiences.

Informants anticipate that consistent and culturally relevant messaging may generate significant long-term benefits. A well-structured communication strategy is perceived by informants as having the potential to increase tourist arrivals in *Keris* Village, thereby creating opportunities to strengthen the local economy and support the long-term sustainability of *keris* heritage preservation. Increased interest in the village

as a cultural destination is also expected to contribute to the continued preservation of its cultural heritage, encompassing both tangible elements and the cultural meanings associated with them. According to the informants, the perceived benefits of IMC implementation in *Keris* Village include greater public awareness of the village as a cultural tourism destination and stronger recognition of the *keris* as a cultural heritage object with significant historical and philosophical value.

However, implementing IMC also presents several challenges, particularly in maintaining message consistency across communication channels. Limited resources can hinder the simultaneous and effective management of these channels. Another challenge involves establishing effective partnerships with travel agents and other relevant stakeholders to ensure that promotional messages remain consistent with the cultural values being preserved. Addressing these challenges requires a more coordinated and systematic communication framework. Establishing a collaborative platform for stakeholders is therefore important for developing an aligned and effective communication strategy that enables messages to reach their intended audiences more effectively.

Taken together, the perspectives of informants from the government, private sector, and local community suggest a broadly shared understanding of the importance of culturally relevant and consistent messaging, although priorities differ across stakeholder groups. Government and private sector informants tend to emphasise coordination and integration across communication platforms, whereas community informants place greater emphasis on the emotional and identity-related dimensions of cultural authenticity. This convergence in communication goals, alongside differences in stakeholder priorities, suggests that culturally relevant and consistent messaging in *Keris* Village may depend less on a single, unified strategy than on an ongoing process of negotiation among stakeholders with complementary yet distinct concerns.

A concrete example of this negotiation emerges from the account of Informant 8, a private-sector representative, who describes the challenge of ensuring that the message "remains consistent and true to the village's heritage" while coordinating communication efforts. In this account, the commercial need for consistent promotion and the cultural need to remain faithful to local heritage are treated as interconnected objectives. Informant 12, a community representative, highlights another dimension by expressing pride in heritage preservation efforts, which provides the message with its cultural substance. Informant 1 adds that collaboration among local authorities, tourism agencies, and cultural institutions can amplify the message. Taken together, these accounts suggest that stakeholders regard fidelity to local heritage as a guiding principle for aligning promotional messages with cultural values. However, these findings reflect how informants describe the preservation of cultural values in promotional activities rather than practices verified through direct observation.

These findings can be compared with the studies discussed earlier. The informants' emphasis on coordinated and consistent messaging is consistent with Kitchen and Burgmann's (2010) argument that IMC facilitates the coordination of messages across communication channels. Similarly, their accounts of collaboration among local authorities, tourism agencies, and cultural institutions align with Palazzo et al. (2021), who examine the adoption of IMC in tourism promotion along the Amalfi Coast as a shift from fragmentation towards collaboration. References to shared goals and cooperation also resonate with Bolton et al.'s (2021) argument that shared goals, shared knowledge, and mutual respect facilitate coordination. Furthermore, they are consistent with Beltramo et al.'s (2021) observation that stakeholders emphasise coordination as a means of strengthening local systems, although relational coordination was not directly measured in the present study.

The findings from *Keris* Village extend this discussion by suggesting that, in a traditional heritage craft setting, consistency is understood not merely as alignment across communication channels but also as fidelity to local cultural heritage. From the informants' perspectives, commercial promotion and the preservation of cultural meaning are therefore interconnected concerns that require ongoing negotiation among stakeholders.

The Perceived Impact of IMC on Tourist Interest, *Keris* Heritage Preservation, and Craft Product Sales in *Keris* Village

The implementation of an integrated marketing communication (IMC) strategy in *Keris* Village is perceived by informants to have generated benefits across several strategic areas. These include increased tourist interest and arrivals, enhanced cultural heritage preservation efforts, improved marketability and sales of traditional crafts, and the promotion of local economic development.

Informants perceive IMC as an effective approach to raising public awareness of the cultural value of the *keris*. Integrated campaigns conducted through various communication channels are considered instrumental in helping the public better understand the *keris* as a cultural symbol that must be preserved. In the informants' view, the active involvement of various stakeholders, including the government, local communities, and the private sector, strengthens collective commitment to preserving the *keris* as an integral part of *Keris* Village's cultural identity. Informants also emphasise that synergy among these stakeholders plays an important role in establishing a strong foundation for the long-term preservation of the *keris*.

> …The IMC campaigns have made it easier for us, the local community, to understand the significance of the *keris* and how we can all play a role in preserving it… (Informant 14)

The statement from Informant 14 indicates that the Integrated Marketing Communication (IMC) campaign plays a role in enhancing the local community's understanding of the cultural value of the *keris* and the importance of preserving cultural heritage. The campaign also encourages public awareness to participate actively in safeguarding and preserving the *keris* tradition as a local cultural identity.

> …IMC strategies have significantly helped in raising awareness and increasing demand for our craft products, especially through e-commerce and social media… (Informant 9)

The statement from Informant 9 indicates that an Integrated Marketing Communication (IMC) strategy contributes to increasing market awareness and demand for *keris* (traditional dagger) craft products through the use of digital platforms. The utilisation of e-commerce, social media, and websites enables craftspeople to expand the reach of their promotions, enhance product visibility, and connect with consumers both nationally and internationally. These findings suggest that the integration of digital communication channels can open up broader marketing opportunities for local craftspeople. However, the reported increase in sales in this context is still based on the informant's perception and has not been verified through quantitative sales data.

The strategic use of multiple, integrated communication channels, including social media platforms, advertising initiatives, and cultural event promotions, the IMC approach is perceived by informants to have helped establish *Keris* Village as a distinctive and appealing cultural tourism destination. Social media platforms such as TikTok, Instagram, and Facebook are widely used by the tourism industry to promote tourist destinations (Arifin et al., 2023). According to the informants, promotional activities that emphasise the *keris* as the village's main attraction have attracted not only domestic audiences but also international audiences, contributing to increased tourist interest.

> ...By using social media is a good idea because it can increase visitor numbers... (Informant 6)

This response highlights the view that, in the digital era, social media platforms such as Instagram, Facebook, and YouTube play a significant role in introducing the *keris* as an integral part of *Keris* Village's cultural heritage while offering a unique tourism experience. When used effectively, these platforms can make meaningful contributions to marketing, commerce, networking, and the expansion of social connections (Infante & Mardikaningsih, 2022). Informants perceive that digital marketing broadens the reach of information and increases tourist interest among both domestic and international audiences.

Promotional initiatives featuring discounts or special offers on craft products during cultural festivals or seasonal events were perceived as enhancing product appeal and encouraging consumer purchases. From the informants' perspective, IMC not only

broadens market reach and enhances the competitiveness of local crafts but also reinforces the *keris* as an integral element of *Keris* Village's cultural identity. Informants viewed this contribution as potentially supporting the preservation of the *keris* tradition for future generations.

These reported outcomes appear to be associated with the specific characteristics of the IMC strategies employed rather than with promotional activities in general. The combination of visually engaging digital content on social media and more established communication channels, such as direct community engagement and word-of-mouth promotion, may help explain the reported improvements in visibility and sales. Digital channels can potentially reach audiences who might not otherwise encounter *keris* products, while community engagement and word of mouth promotion may help reinforce trust among audiences familiar with the craft through existing offline relationships. This suggests that the perceived effectiveness of IMC in this context may stem less from any single communication channel than from the complementary use of digital reach and community-based credibility. However, this explanation represents the authors' tentative interpretation of the informants' accounts; it was not empirically tested through comparisons between communication channels or measurements of their individual effects.

Compared with previous studies, the informants' emphasis on social media and e-commerce is consistent with Infante and Mardikaningsih (2022) and Arifin et al. (2023), discuss the role of social media in promoting businesses and tourist destinations, respectively. It also aligns with Kushwaha et al. (2020), who identify social and digital media as emerging components of IMC. The informants' perception that IMC supports local economic activity is likewise consistent with Palazzo et al. (2021), who discuss the positive effects of IMC on economic and social development, as well as with the studies by Porcu et al. (2019) and Serie et al. (2015) on the role of IMC in hospitality settings. The findings from *Keris* Village extend this body of research to the context of a heritage craft village, highlighting the perceived connection between promotional activities and cultural heritage preservation. However, because the outcomes examined in this study are based on informants' perceptions rather than independently verified measurements, the findings indicate the plausibility of these relationships rather than establishing definitive causal effects.

Challenges Faced by Craftsmen in Implementing IMC Strategies: Informants' Perspectives

The implementation of an integrated marketing communication (IMC) strategy in *Keris* Village faces several challenges that, according to the informants, limit its effectiveness. One major barrier identified by the informants is the limited understanding of IMC concepts and principles among local *keris* craftsmen. Although much of their attention is devoted to craftsmanship and the production process, the strategic role of communication in promoting

their products to broader markets is often overlooked. This limited understanding may constrain their ability to optimise the use of integrated communication channels, thereby preventing the full marketing potential of *keris* products from being realised.

> …Many are more focused on preserving the traditional craft itself, which is admirable, but they often lack the resources and knowledge to effectively promote their products… (Informant 5)

Craftsmen in *Keris* Village are also described by informants as facing difficulties in managing the various communication channels required for an IMC strategy, including social media, websites, and cultural event promotions. According to the informants, craftsmen often lack the skills and resources necessary to use both digital and conventional communication channels effectively. Time and human resource constraints, arising from the craftsmen's primary focus on *keris* production, further limit their capacity to implement effective communication strategies. Consequently, marketing initiatives may remain suboptimal, and the potential of digital marketing may not be fully realised.

In addition to these limitations in skills and resources, financial constraints pose another significant challenge for local craftsmen. According to the informants, craftsmen primarily operate as small-scale enterprises, and many face limited access to capital. Activities such as social media campaigns, the development of marketing materials, and the organisation of cultural events require financial investment that may be difficult for these small-scale enterprises to sustain. These financial constraints may further hinder efforts to promote *keris* products to broader domestic and international markets.

Beyond these internal limitations, external factors, including weak coordination and collaboration among craftsmen, government institutions, and other stakeholders, also contribute to these challenges. Arifin et al. (2024) argue that collaboration is important form of interaction that facilitates cooperation among various parties in implementing activities or programmes. Without adequate support and synergy among stakeholders, craftsmen may struggle to implement IMC strategies effectively. This lack of collaboration may consequently limit *Keris* Village's ability to realise its full potential as a recognised cultural tourism destination.

> …We, as a community, need to encourage more collaboration with the government and private sector to provide them with the necessary support to promote their products to a global audience… (Informant 13)

Externally, *keris* craftsmen also face competition from modern craft products that are easier to market and better aligned with contemporary consumer preferences, according to the informants. Products featuring more innovative designs and appealing marketing strategies may put traditional *keris* products at a competitive

disadvantage in terms of design and promotion. This competition may make it more challenging for craftsmen to market their products effectively through modern and flexible IMC channels that can help them reach broader and more diverse audiences.

> …As entrepreneurs, we need to help bridge this gap by sharing knowledge and collaborating with local craftsmen. However, this requires a shift in mindset and an investment in both time and technology to modernise the way we market these cultural products… (Informant 7)

Traditional marketing methods, such as word of mouth promotion and local community-based marketing, on which craftsmen still rely, may be effective on a small scale but are insufficient to reach international audiences. Craftsmen who depend primarily on these methods may not fully exploit the potential of IMC, thereby limiting innovation in the marketing of *keris* products.

Some senior craftsmen, who are accustomed to traditional business practices, are reportedly reluctant to adopt the digital technologies required to implement IMC strategies. This limited capacity to use digital platforms and modern marketing tools may restrict their ability to expand their market reach and reduce the overall effectiveness of their promotional activities.

Another challenge lies in the difficulty craftsmen face in developing marketing messages that are both consistent and aligned with the cultural identity of the *keris*. According to the informants, many craftsmen struggle to communicate the cultural, historical, and distinctive values of the *keris* clearly and persuasively. This task is further complicated by the need to adapt messages to the specific characteristics of different communication channels, each of which may target a different audience.

Craftsmen seeking to introduce *keris* products to international markets are also perceived as facing difficulties in understanding overseas consumer preferences and behaviour. Developing an effective IMC strategy for international markets requires an in-depth understanding of diverse market dynamics. Without adequate knowledge of international markets and global marketing practices, craftsmen may find it difficult to tailor their strategies and engage effectively with audiences worldwide.

Among the challenges outlined above, limited digital literacy and financial constraints may be particularly consequential because they appear to restrict craftsmen's ability to pursue opportunities identified elsewhere in the findings, such as expanding their use of digital marketing and entering international markets. This assessment represents the authors' interpretation of how the informants' accounts connect these constraints with other barriers. For example, Informant 5 referred to a lack of the resources and knowledge needed to promote products, while Informant 7 highlighted the time and technological investment required to modernise marketing practices. This assessment is not based on a

ranking provided by the informants or on a count of how frequently each challenge was mentioned and should therefore be regarded as tentative. By contrast, difficulties in maintaining message consistency and resistance to change across generations appear, in the authors' interpretation, to compound the primary constraints and make them more difficult to address. These observations suggest that interventions aimed at strengthening digital skills and improving access to capital could potentially enhance craftsmen's capacity to engage in IMC-based promotion. However, this proposition was not tested in the present study.

Compared with previous studies, the informants' accounts are consistent with Duan et al. (2023), who discuss the challenges faced by traditional crafts, and with Arifin et al. (2024, 2025), who identify collaboration as an important mechanism for cooperation in tourism communication, including on Madura Island. The informants' emphasis on closer collaboration among government institutions, the private sector, and local communities therefore aligns with this body of literature. The findings from *Keris* Village extend this discussion by providing a more specific account of the barriers perceived by stakeholders, including limited understanding of IMC, inadequate digital skills, financial constraints, and difficulties in maintaining consistency between marketing messages and cultural identity. To the authors' knowledge, the studies reviewed here have not specifically examined these challenges in the context of *keris* craftsmen. Nevertheless, because the craftsmen themselves were not interviewed, these perceived barriers require further investigation and should be validated against the craftsmen's own experiences and accounts.

CONCLUSION

The findings of this study contribute empirically to understanding how integrated marketing communication (IMC) is implemented in the promotion of cultural heritage, such as the *keris*, rather than extending IMC theory itself. Beyond reaffirming the established importance of consistent messaging, stakeholder coordination, and digital promotion, the study provides insights into how these elements are negotiated between cultural fidelity and commercial objectives in a heritage craft village. It also identifies barriers as perceived by stakeholders rather than directly reported by craftsmen and offers context-specific recommendations for *Keris* Village.

From the informants' perspective, integrating diverse communication channels plays an important role in expanding the reach of information about the *keris* at both national and international levels. A key recommendation is to establish clear and well-structured coordination mechanisms among stakeholders, including government institutions, the private sector, and local communities, to ensure consistent and effective messaging. Through the use of multiple platforms, such as social media, websites, and integrated promotional

campaigns, informants perceive that IMC can strengthen the image of the *keris* as a cultural artefact of significant historical and artistic value. Furthermore, informants believe that IMC can stimulate tourist interest and, in turn, contribute to the local economy, particularly in the tourism and handicraft sectors.

At the same time, informants identified several challenges, including limited resources and an incomplete understanding of integrated communication, that may hinder the effective implementation of IMC. To address these barriers, the findings highlight the potential value of targeted training and capacity-building initiatives focused on digital technologies. Such initiatives could help bridge existing knowledge and skills gaps. Furthermore, IMC strategies should be aligned with broader cultural preservation objectives to ensure that promoting the *keris* supports heritage conservation while contributing to sustainable social and economic development in *Keris* Village.

In practical terms, the recommendations respond directly to the challenges identified in the findings. Weak coordination among government institutions, private-sector actors, and local communities, together with difficulties in maintaining consistent messaging, could be addressed through structured mechanisms, such as regular multi-stakeholder communication forums and shared communication guidelines. These guidelines could establish core messages about the cultural significance of the *keris* and provide guidance on how these messages should be communicated across different channels. In *Keris* Village, the forum could be convened by relevant local government institutions, such as the regency's tourism and culture authorities, in collaboration with the village government. Private-sector entrepreneurs and community representatives could contribute their promotional expertise and cultural knowledge.

Limited understanding of IMC and gaps in digital skills could be addressed through targeted capacity-building programmes focusing on practical competencies, such as basic digital marketing, social media content creation, and e-commerce management, rather than general digital literacy alone. Informant 7's suggestion that entrepreneurs share their knowledge with local craftsmen indicates that experienced local entrepreneurs could serve as mentors, while government institutions could provide training facilities and facilitate coordination. Given the reported financial constraints, training programmes should also prioritise low-cost tools and collaborative activities, such as joint content production, to reduce the financial burden on individual craftsmen.

Future research should address questions that remain unresolved by this study. Most importantly, because the benefits discussed here reflect informants' perceptions, longitudinal research combining visitor records, sales data, and heritage preservation indicators, such as the number of active *keris* makers and apprentices, is needed to determine whether these perceived benefits translate into sustained tourism growth, economic gains, and heritage preservation

outcomes. Studies involving active *keris* craftsmen as informants would provide a clearer understanding of their experiences in implementing IMC and help validate the stakeholder perceptions reported in this study. In addition, direct observation of promotional activities and stakeholder meetings could reveal how coordination operates in practice. Finally, comparative research across other heritage craft villages could help assess the transferability of these findings to different cultural and institutional contexts.

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Weaving the Social Fabric of Faith-Based Tourism: Stakeholder Collaboration and the Resilience of Muslim-Friendly Tourism Destinations in Malaysia

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ABSTRACT

Muslim-friendly tourism has become a strategic priority for destinations seeking to capture the expanding global Muslim travel market. In Malaysia, the Muslim-Friendly Tourism and Hospitality Assurance and Recognition (MFAR) framework is the national instrument for developing this segment. Although recognition is awarded to individual firms, the tourist experience is produced collectively across hotels, travel agencies, guides, suppliers, and regulators. This exploratory study shifts the focus from the certified firm to the destination ecosystem and asks how hotel and travel agency stakeholders perceive the sustainability of Muslim-friendly provision, which coordination and governance gaps affect its resilience, and what pathways could strengthen it. Drawing on two sector-specific focus group discussions with eleven informants, reflexive thematic analysis identified four themes. Muslim-friendly provision was either contingent on revenue or rooted in faith-aligned commitments that pre-dated certification; unlinked databases and an uncertified supplier base pushed coordination costs onto individual operators; agencies valued the official guide list but stressed the importance of keeping certification records current and aligning credentials with practical competence; and informants converged on integrated licensing, standardised training, and joint promotion. Coordination and credentialing problems were reported mainly by travel agencies, which assemble multi-vendor journeys, whereas hotels focused on ownership and demand. The study proposes that, in credential-dependent faith-based tourism, destination resilience depends not only on the number of certified firms but also on

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the currency of the shared credential infrastructure and the collaborative governance that maintains it, and offers these propositions for testing in larger, multi-actor studies.

Keywords: Collaborative governance, community development, destination resilience, Muslim-friendly tourism, stakeholder collaboration, sustainable tourism

INTRODUCTION

The global Muslim travel market has become one of the most dynamic and fastest-growing segments of the international tourism economy. Driven by a young, expanding, and increasingly affluent Muslim population, the number of Muslim international travellers and their associated expenditure have risen sharply, prompting destinations across both Muslim-majority and non-Muslim countries to compete for this segment (Mastercard & CrescentRating, 2024; Yasin et al., 2025). This growth has given rise to Muslim-friendly tourism, an approach in which mainstream tourism providers adapt their products and services to accommodate the faith-based needs of Muslim travellers, ranging from the availability of halal food and prayer facilities to considerations of modesty and culturally sensitive service (Islam & Ashton, 2024; Moshin et al., 2020). As the segment matures, the strategic question for destinations has shifted from whether to serve Muslim travellers to how to do so credibly, consistently, and sustainably over time.

To address this question, many destinations have turned to certification and recognition schemes as instruments for signalling Muslim-friendly credibility and reducing the information asymmetry that travellers face when assessing unfamiliar providers (Jabeen et al., 2025; Yahya et al., 2025). Malaysia has been a consistent global frontrunner in this domain, supported by a mature halal ecosystem and strong policy commitment (Adinugraha et al., 2023; Sumardi et al., 2025). Central to its positioning is the Muslim-Friendly Tourism and Hospitality Assurance and Recognition (MFAR) framework, administered by the Islamic Tourism Centre (ITC) under the Ministry of Tourism, Arts and Culture to recognise accommodation and travel providers that meet defined Muslim-friendly criteria (Islamic Tourism Centre, 2025a, 2025b). Certification is fundamentally a firm-level mechanism as it is granted to and assessed at the individual establishment level. The tourist experience, by contrast, is produced collectively across an interdependent chain of hotels, transport, food, guiding, and regulatory actors, none of which can deliver a complete Muslim-friendly journey alone (Almunawar et al., 2025; Fyall & Garrod, 2020).

This tension is especially consequential in the Malaysian context, where Muslim-friendly tourism is positioned not merely as a market niche but as a national development priority linked to economic diversification and community participation (Islamic Tourism Centre, 2025a; Ruzulan et al., 2022). Over its first decade, the MFAR

framework has established a national Muslim-friendly standard and a growing population of recognised firms, and the Islamic Tourism Centre has extended this work to guiding through the Muslim-Friendly Tour Guide certification (Islamic Tourism Centre, 2025a). Whether this population adds up to a resilient destination is a separate question: a certified hotel cannot guarantee a Muslim-friendly journey if the guides, suppliers, and regulatory records on which it depends are uncertified, unavailable, or out of date. Understanding the systemic conditions under which certification does or does not produce durable destination value is therefore of direct practical importance for Malaysia and for comparable destinations pursuing similar strategies. This study examines those conditions from the perspective of two supply-side sub-sectors, accommodation providers (hotels) and intermediaries (travel agencies), which occupy different positions in the Muslim-friendly value chain.

Community support and systemic resilience are widely recognised as foundations of sustainable tourism development. A destination's capacity to deliver, maintain, and adapt its offering over time depends less on the performance of any single firm than on the strength of the relationships that connect its stakeholders, the density of trust and cooperation among them, and their collective ability to absorb shocks and evolve (Basyar et al., 2025; Hall et al., 2018; Harini et al., 2025). These relational qualities, which may be understood as the social fabric of a destination, are precisely the properties that recent scholarship associates with tourism resilience and sustainability. Viewed in this light, certification contributes to sustainability only when it is embedded within, and reinforced by, a well-functioning system of stakeholder relationships rather than treated as a standalone firm-level accolade (Elhoushy et al., 2026; Velaoras et al., 2025).

A first body of scholarship relevant to this systemic view concerns stakeholder collaboration and collaborative governance in tourism. Stakeholder theory holds that outcomes in complex tourism systems are shaped by the interests, relationships, and coordination of multiple interdependent actors rather than by any single organisation (Basyar et al., 2025; Freeman, 1984). Collaborative governance, in turn, describes the arrangements through which public agencies and private actors jointly steer a shared domain (Ansell & Gash, 2008), and collaboration has long been treated as central to community tourism planning (Jamal & Getz, 1995) and to building tourism resilience in heritage and community settings (Basyar et al., 2025). Applied to Muslim-friendly tourism, this perspective implies that the reliability of the traveller's experience depends on whether certified hotels can source from certified suppliers, whether trained and credentialed guides are actually available, and whether the regulatory bodies underpinning the system function coherently, none of which is guaranteed by firm-level certification alone.

A significant body of work demonstrates that social capital and trust are essential enablers of collective action. Social capital, understood as the trust, norms of reciprocity, and networks that allow actors to rely on one another, is widely regarded as a determinant of sustainable community and tourism development (Akter Sumi et al., 2025; Coleman, 1988; Putnam, 2000). In credential-dependent systems such as Muslim-friendly tourism, trust is not merely interpersonal but institutional: it rests on formal rules, registries, and credentials rather than on personal acquaintance (Zucker, 1986). Stakeholders must be able to depend on the public registries, licences, and recognition schemes that certify the reliability of one another's services. This institutional trust is strengthened when the public registries, licensing, and credentials that stakeholders rely on are kept current and well-aligned, because actors can then rely on one another without duplicating verification themselves (Akter Sumi et al., 2025). The value of this trust therefore depends on registries remaining current, since actors who rely on them have less reason to verify information independently.

Despite the clear relevance of these systemic perspectives, the existing literature on Muslim-friendly certification has concentrated overwhelmingly on the demand side, examining tourist perceptions, destination image, satisfaction, and loyalty (Al-Ansi & Han, 2019; Rahman et al., 2020), and on the firm side, investigating adoption motivations, compliance, and service quality (Hussain et al., 2025; Osman et al., 2024). Comparatively little research has treated the destination itself as the unit of analysis or examined how stakeholders across the value chain perceive the sustainability of Muslim-friendly provision and the collaborative conditions that determine its resilience. Consequently, there is limited understanding of how firm-level certification can be most effectively connected into a resilient destination system, and of the specific relational mechanisms through which the wider ecosystem is strengthened. This gap is particularly striking given repeated observations that Muslim-friendly provision is intrinsically a collective, cross-actor accomplishment.

Addressing these gaps, this exploratory study shifts the analytical focus from the certified firm to the destination ecosystem and examines how tourism stakeholders perceive the sustainability and resilience of Muslim-friendly tourism in Malaysia. Integrating stakeholder theory, social capital, and collaborative governance within a social fabric perspective, the study is guided by three research questions: (1) How do tourism stakeholders perceive the long-term sustainability of MFAR as an instrument for developing Muslim-friendly destinations? (2) What collaboration and governance gaps threaten the resilience of the Muslim-friendly tourism ecosystem? (3) What innovation and capacity-building pathways do stakeholders propose to strengthen the destination as a whole? Drawing on focus group discussions with hotel and travel agency stakeholders, the study reframes MFAR as one thread within a broader social fabric whose strength depends on the relationships binding actors together.

Its specific contribution is the proposition that, in credential-dependent faith-based tourism, certification relocates the burden of verification from individual firms to shared institutional records, so that destination resilience depends on whether those records are collaboratively kept current. The study also offers policy directions for building sustainable, community-embedded Muslim-friendly destinations.

LITERATURE REVIEW

Muslim-Friendly Tourism and the MFAR Framework

Muslim-friendly tourism (MFT) refers to the provision of products and services that accommodate the faith-based needs of Muslim travellers within the wider tourism system, encompassing prayer facilities, halal consumption, modesty considerations, and culturally sensitive service (Battour & Ismail, 2016; Jabeen et al., 2025; Kamri et al., 2024). Unlike a narrowly religious form of travel, MFT operates across mainstream tourism, requiring conventional providers to adapt their offerings to a distinct market segment (Moshin et al., 2020). Malaysia's MFAR framework formalises these expectations into a recognition scheme with graded tiers, intended to serve as a mark of trust that reduces the information asymmetry Muslim travellers face when assessing unfamiliar destinations (Islamic Tourism Centre, 2025a; Yahya et al., 2025).

The existing literature on Muslim-friendly certification has concentrated heavily on the demand side, examining tourist perceptions, destination image, satisfaction, and loyalty (Al-Ansi & Han, 2019; Rahman et al., 2020), and on the firm side, investigating adoption motivations, compliance, and service quality (Hussain et al., 2025; Osman et al., 2024). Comparatively little work has examined the destination as a collective system, despite repeated observations that Muslim-friendly provision cannot be delivered by any actor in isolation (Almunawar et al., 2025). This study responds to that imbalance by treating the ecosystem, rather than the certified firm, as the unit of analysis.

Destination Resilience and Sustainable Tourism Development

Resilience in tourism refers to the capacity of a destination and its stakeholders to anticipate, absorb, and adapt to disturbances while maintaining function and pursuing development goals (Basyar et al., 2025; Hall et al., 2018; Lew, 2014). Sustainability, in turn, concerns the ability of a destination to maintain its economic, social, and cultural value over time without eroding the resource base on which it depends (Elhoushy et al., 2026; Harini et al., 2025). Both concepts direct attention beyond the performance of individual businesses to the health of the wider system: its diversity, its redundancy, and above all the quality of the linkages among its parts. A growing body of work argues that certification schemes contribute to sustainability only when they are embedded within, and reinforced by, this systemic context rather than treated as standalone firm-level accolades (Elhoushy et al., 2026; Velaoras et al., 2025).

Applied to Muslim-friendly tourism, this perspective implies that the resilience of

a destination depends on whether certified hotels can source from certified suppliers, whether trained and credentialed guides are actually available and reliable, and whether the regulatory bodies that underpin the system function coherently. Where these connections are weak, even well-certified firms cannot guarantee an end-to-end Muslim-friendly experience, and the destination's offering is only as reliable as its weakest link (Almunawar et al., 2025; Fyall & Garrod, 2020).

Stakeholder Collaboration, Social Capital, and Collaborative Governance

The theoretical foundation for this study lies at the intersection of stakeholder theory, social capital, and collaborative governance. Stakeholder theory holds that outcomes in complex systems are shaped by the interests, relationships, and coordination of multiple interdependent actors rather than by any single organisation (Basyar et al., 2025; Freeman, 1984). Social capital, understood as the trust, norms of reciprocity, and networks that facilitate collective action, is widely recognised as a determinant of sustainable community and tourism development (Akter Sumi et al., 2025; Coleman, 1988; Nahapiet & Ghoshal, 1998; Putnam, 2000). Collaborative governance describes the arrangements through which public agencies and private actors jointly steer a shared domain (Ansell & Gash, 2008); in tourism, partnerships among public and private actors have long been examined as a route to sustainable development (Bramwell & Lane, 2000; Jamal & Getz, 1995), and more recently as central to building tourism resilience in heritage and community settings (Basyar et al., 2025).

Each perspective, taken alone, leaves a gap that the others fill. Stakeholder theory identifies who is interdependent but says little about how actors come to rely on one another without verifying each other's claims. Social capital explains that reliance, and its institutional form, trust placed in formal rules, registries, and credentials rather than in known individuals (Zucker, 1986), is particularly relevant to certification systems. Yet institutional trust is only as reliable as the infrastructure that produces it, and the upkeep of shared registries and licences is a collective good that no individual firm has the incentive or authority to provide. Collaborative governance specifies the arrangements through which public and private actors could jointly maintain that infrastructure (Ansell & Gash, 2008). Integrating the three therefore yields a specific expectation that guides the analysis: in a credential-dependent destination, certification relocates the burden of verification from firms to shared institutional records, so that the resilience of the destination depends on whether those records are collaboratively kept current.

These perspectives are organised in this study through a social fabric metaphor, used as a heuristic rather than as an explanation in its own right. Each element of the metaphor is tied to an observable condition: threads refer to the commitment of individual firms to Muslim-friendly provision; the weave refers to coordination among firms, suppliers, and regulators; and knots refer to the credential interfaces, such as registries

and licences, at which actors rely on one another's claims. The metaphor is used in the analysis only where these referents can be linked to the data.

METHODS

Research Design

This study adopts a qualitative interpretivist design to explore how tourism stakeholders make sense of the sustainability and resilience of Muslim-friendly tourism in Malaysia. An interpretivist stance is appropriate because the study focuses on meanings, perceptions, and collective sense-making rather than measuring the prevalence of predefined variables (Ren, 2023). Given that the research questions centre on relationships, collaboration, and shared understandings across the ecosystem, a qualitative approach that can surface stakeholders' own framings was preferred over a survey-based design.

Research Setting and Participants

The study was conducted in Malaysia, a destination with a mature halal ecosystem and an established Muslim-friendly certification regime, which makes it a suitable setting for examining the systemic conditions of resilience and sustainability. Participants were drawn from two complementary sub-sectors of the tourism value chain: accommodation providers (hotels) and intermediaries (travel agencies). This two-sector composition was deliberate, allowing the study to capture the perspectives of actors positioned at different points in the Muslim-friendly journey and to observe where their experiences of the ecosystem converge and diverge. In total, eleven informants participated, including representatives of government-linked and independently owned hotels, established and emerging travel agencies, and industry-linked academic practitioners, providing exploratory insight into how two supply-side sub-sectors perceive the destination system. Sample adequacy was judged by information power rather than saturation (Malterud et al., 2016): the aim was a bounded, exploratory account, the population was narrowly specified, and sector-homogeneous groups allowed informants with shared experience to challenge and elaborate on one another's accounts (Krueger & Casey, 2015). Table 1 summarises the participant profile.

Table 1
Participant profile

Code	Sub-Sector / Role	Ownership or Orientation
H01	Hotel- government-linked	Islamic investment-linked; shariah-oriented
H02	Hotel - international brand	Conventional; diverse workforce
H03	Hotel - mid-scale	Shariah-compliant orientation
H04	Hotel - chain property	State-directed adoption
H05	Hotel - city property	Conventional; mixed market
H06	Hotel - academic/industry trainer	Education-linked practitioner

Table 1 (*continued*)

Code	Sub-Sector / Role	Ownership or Orientation
TA01	Travel agency	Muslim-market outbound/inbound
TA02	Travel agency	Emerging / entrepreneurial operator
TA03	Travel agency	Inbound Muslim-market specialist
TA04	Travel agency	Corporate and government segment
TA05	Travel agency/association-active	Association-linked practitioner

Note. Codes are assigned to preserve anonymity. H = hotel sub-sector; TA = travel agency sub-sector
Source: Authors' documentation

Data Collection

Data were generated through two focus group discussions (FGDs), one with hotel representatives and one with travel agency representatives, conducted on the same date in separate sessions. The FGD method was selected because the study's interest in collaboration, shared perceptions, and ecosystem-level dynamics is well served by a format that enables participants to build on, contest, and jointly elaborate on one another's accounts (Islam, 2023). Each session followed a semi-structured protocol organised around understanding of the framework, implementation, challenges, customer perception, benefits, sustainability, competition, and improvement, with ample room for participants to raise emergent concerns. Sessions were moderated by experienced facilitators and documented by rapporteurs, who produced speaker-attributed notes recorded predominantly in Malay and mixed Malay–English. These notes, rather than verbatim transcripts, form the analysed material; the excerpts reported in the Results and Discussion section are the authors' English translations and are identified by speaker code. For the present study, the analysis concentrated on the segments of the discussions concerned with sustainability, competition, collaboration, credentialing, and improvement, which speak most directly to the research questions on resilience and the destination system. The sessions formed part of a wider funded project on MFAR; a separate study drawing on the same sessions examines operators' adoption motivations through an institutional lens, whereas the present analysis addresses a different segment of the discussions, different research questions, and a different informant set.

Data Analysis

The discussions were analysed using thematic analysis following the six-phase approach of Braun and Clarke (2006), comprising familiarisation, initial coding, searching for themes, reviewing themes, defining themes, and reporting. Coding proceeded both inductively, remaining open to participants' own framings, and deductively, sensitised by the study's stakeholder-collaboration and destination-resilience lens. First-order codes capturing participants' expressions, such as reliance

on revenue, gaps between certifying bodies, the currency of registry information, and calls for joint training, were grouped into higher-order categories and then into the four aggregate themes. Table 2 sets out the resulting coding framework, the first-order codes that compose each theme, and the informants whose statements were coded to it. Because the approach was reflexive, inter-coder agreement statistics were not used as a validation criterion; Braun and Clarke (2019) argue that such measures presuppose a single correct coding and sit uneasily with interpretive analysis. Instead, the themes were tested in three ways. First, every excerpt used in the analysis was traced to a named speaker in the rapporteur records, providing an audit trail from claim to source. Second, the data were searched for disconfirming cases, that is, statements that contradicted or qualified each emerging theme, and these are reported alongside the supporting evidence in the Results and Discussion section. Third, following Onwuegbuzie et al. (2009), the distribution of each theme across informants and sectors was recorded, so that themes resting on few voices could be identified and the claims

Table 2
Coding framework and distribution of themes across informants

	Theme	First-Order Codes	Hotels (n = 6)	Travel Agencies (n = 5)
1.	Commercial contingency and pre-existing commitment	Revenue-contingent owner support; demand-led alignment with specific markets; practices pre-dating MFAR; MFAR as an improvement guideline	3 (H03, H05, H06)	0
2.	Coordination across the ecosystem	MFAR cannot work in isolation; unlinked certification and compliance records; uncertified local suppliers and in-house sourcing; regional gaps in certified accommodation; difficulty building inter-agency trust	1 (H04)	5 (TA01-TA05)
3.	Trust and reliability in credentialing	Currency of the guide listing; certification and practical competence; confidence from the official guide list	0	3 (TA02, TA03, TA04)
4.	Collaborative innovation and capacity building	Licence alignment; standardised training; cost-shared paid training; roadshows and joint promotion; promotion to non-adopting firms	2 (H03, H05)	2 (TA01, TA05)

Note. Counts show the informants whose speaker-attributed statements were coded to each theme. In focus groups, not raising a point is not equivalent to disagreeing with it (Onwuegbuzie et al., 2009); counts therefore indicate where evidence for a theme is concentrated, not how widely a view is held
Source: Authors' analysis

drawn from them limited accordingly. As the two FGDs provided different sub-sector perspectives, a cross-sector comparison was conducted to determine whether concerns were shared across the ecosystem or specific to one sector.

Trustworthiness and Ethical Considerations

Trustworthiness was pursued in line with established qualitative criteria (Lincoln & Guba, 1985; Nowell et al., 2017). Credibility was supported by drawing on two independent sub-sector groups, by grounding each theme in speaker-attributed excerpts, by reporting how many informants supported each theme, and by reporting disconfirming cases. Confirmability was aided by maintaining rapporteur records and an auditable link between raw accounts and interpretive claims. Transferability is supported through a thick description of the setting and participant profile, enabling readers to judge the applicability of the findings to comparable destinations. Ethically, participation was voluntary and informed, and identifying details have been anonymised through the coding scheme presented in Table 1.

RESULTS AND DISCUSSION

The analysis yielded four interrelated themes that together describe the condition of the Muslim-friendly tourism ecosystem, as experienced by the hotel and travel agency informants, and the prospects for its resilience: (1) commercial contingency and pre-existing commitment in sustaining Muslim-friendly practices; (2) coordination and integration across the tourism ecosystem; (3) trust and reliability in credentialing systems; and (4) collaborative innovation and capacity building as pathways to resilience. Each theme is presented with illustrative evidence and interpreted through the study's stakeholder-collaboration and destination-resilience lens. The distribution of each theme across informants is shown in Table 2, and contrary or qualifying evidence is reported within each theme. Given the size of the sample, the themes describe how these informants experienced the ecosystem; they are not estimates of how widely these views are held across the Malaysian industry.

Commercial Contingency and Pre-Existing Commitment in Sustaining Muslim-Friendly Practices

A first set of findings concerns how stakeholders judge the durability of Muslim-friendly provision. This theme emerged only in the hotel session (three of six hotel informants; Table 2), which reflects the fact that hotels carry the fixed investment that Muslim-friendly provision requires. For one informant (H05), whose hotel has non-Muslim ownership, the sustainability of these practices is inseparable from commercial logic: the owner's support rests on financial return rather than religious conviction.

> As long as he can accept it and the revenue rises, it is okay; he does not care as long as the revenue is high. (H05)

> Profit does rise, because there are many tourists from Brunei... we need to align our efforts with the demand for oil and gas from international tourists. (H05)

This commercial framing matters for resilience because it renders Muslim-friendly provision contingent on market conditions: practices sustained solely by revenue are vulnerable to downturns or shifts in demand. Although this view was voiced by a single informant, it is significant because it is the only account in which the owner's commitment is explicitly conditional, and the same contingency may apply to other conventionally owned properties. The contrasting accounts came from hotels whose Muslim-friendly practices pre-dated MFAR and were rooted in ownership or organisational identity.

> Whatever MFAR wants to audit or emphasise, we already had before applying. We already have the Muslim-friendly hotel criteria; we have a segregated pool, gym, and spa, because we are owned by Tabung Haji. (H03)

> Before MFAR, our goal was already to become a shariah-compliant hotel. When MFAR came, it showed how far we can go for the best Muslim-friendly experience; it is a good guideline to see where we still need to improve. (H06)

These accounts support continuity rather than conversion. For faith-aligned hotels, MFAR formalised and benchmarked an existing position; it did not create the commitment, and H03's remark that the property already had what MFAR audits indicates that, for such firms, recognition served mainly to formalise and benchmark existing practice, although H06 valued it as a guideline for identifying where further improvement was needed. The data therefore do not support the stronger claim that certification converts commercially motivated adoption into internalised values; establishing that would require evidence from conventionally owned firms before and after recognition, which this study does not have. Read through a resilience lens, the durability of Muslim-friendly provision appears to rest on ownership-level commitments that exist independently of the certificate, while provision in conventionally owned firms remains revenue-contingent. The coexistence of these two orientations indicates an ecosystem of uneven resilience, in which the sustainability of the destination's Muslim-friendly character depends on the mix of ownership types among its firms (Elhoushy et al., 2026; Jabeen et al., 2025).

Coordination and Integration Across the Tourism Ecosystem

The most widely shared theme concerned coordination: all five travel agency informants and one hotel informant (H04) described the Muslim-friendly offering as delivered collectively and reported gaps in the chain that delivers it. Travel agency participants, in particular, emphasised that a genuinely Muslim-friendly journey requires a coordinated chain of accommodation, food,

guiding, and transport, which frequently does not exist in practice.

> MFAR cannot work in isolation. We need halal-certified hotels, trained guides, compliant restaurants — all in one package. (TA03)

Participants also reported that the certification and regulatory schemes are not linked. TA04 noted that MFAR and Muslim-Friendly Tour Guide (MFTG) certification records are not connected to the ministry's compliance databases, so that no single system shows whether a provider is compliant across schemes.

These coordination gaps are felt most directly at the level of provisioning. Operators described taking on functions that a more fully connected ecosystem would provide, sourcing certified goods themselves where local suppliers lacked halal certification, and building itineraries around the availability of certified accommodation in some regions.

> We used to order from small vendors, but many did not have halal certification. Now we have to source everything ourselves. (H04)

> ITC developed the Muslim-friendly tour guide certification before MFAR, so that is where we began to understand what is needed. The itinerary must mention prayer times and the needs a Muslim traveller has to know. (TA02)

> Building that trust between the agencies is already the hard part. (TA01)

> I received a task to the East Coast, but there were no suitable hotels... so in the itinerary we arranged to eat at eateries around the mosque precinct instead. (TA05)

These accounts show that the costs of an incomplete ecosystem fall on individual operators. Where suppliers are uncertified, hotels absorb the cost of in-house sourcing (H04); where certified accommodation is absent, agencies redesign itineraries around the gap (TA05); and certification records remain unlinked to compliance databases (TA04). On these accounts, the certification of individual firms has not produced the connected supply chain on which an end-to-end Muslim-friendly journey depends. Resilience scholarship suggests that a network delivers value only when its components are connected end to end (Almunawar et al., 2025; Basyar et al., 2025; Fyall & Garrod, 2020), and the coordination gaps reported here are therefore a present weakness of the system rather than simply a next stage of its development. A disconfirming pattern is also instructive: five of the six hotel informants did not raise coordination gaps, which is consistent with hotels delivering a largely self-contained product, whereas agencies must assemble a journey from many independent providers.

Trust and Reliability in Credentialing Systems

A third theme, raised by three of the five travel agency informants and by

none of the hotel informants, concerns the reliability of credentialing systems on which intermediaries depend. TA04 highlighted concerns regarding the currency of information in the official online listing of certified guides, which agencies commonly used as a reference when selecting guides. This observation underscores the importance of maintaining accurate and updated certification records, particularly when information is managed across multiple agencies.

Another important consideration concerns the relationship between formal certification and practical competence. TA03 described an instance in which a certified guide assigned to a group of Muslim pilgrims demonstrated limited understanding of their specific needs. In contrast, TA02 emphasised the value of the official guide list in supporting confidence during the guide selection process.

> The guide assigned to lead that group of Muslim pilgrims held the certification but had no real understanding of what Muslim travellers need. (TA03)

> I trusted the list provided by [the certifying body] and relied on it with confidence when selecting the guide. (TA02)

Taken together, these accounts highlight both the importance of institutional credentials in supporting intermediary decision-making and opportunities to strengthen their practical effectiveness. Travel agencies rely on certification systems to reduce uncertainty and facilitate guide selection (Akter Sumi et al., 2025; Zucker, 1986). While TA02's experience illustrates the confidence that such systems can generate, the observations of TA03 and TA04 suggest that continued attention to information accuracy and guide competence remains important. These findings indicate that the value of credentialing extends beyond formal certification to encompass the ongoing maintenance of reliable information and the demonstration of relevant service competencies. Strengthening coordination among relevant stakeholders, regularly updating certification records, and incorporating practical assessments of Muslim-friendly service competencies could further enhance confidence in the credentialing system and support the consistent delivery of quality tourism experiences.

Collaborative Innovation and Capacity Building

Despite these problems, informants from both sectors (two hotel and two agency informants; Table 2) proposed remedies. A fourth theme captures their convergence on collaborative innovation and capacity building as the route to a more resilient and sustainable destination. A recurring proposal was to integrate the currently disjointed licensing and certification schemes. TA05 pointed out that the city guide licence and the Muslim-friendly guide licence are not aligned, which makes the credentialing system difficult to navigate.

Participants also called repeatedly for expanded, standardised, and continuous

training, framing knowledge deficits as a shared constraint on the sector's ability to sell and deliver Muslim-friendly products, and expressing willingness to invest in structured, even paid, capacity building.

> More detailed and standardised training would help us build a consistent understanding and apply that knowledge with greater confidence. (TA01)

Beyond training, stakeholders pointed to promotional collaboration and joint market development as means of strengthening the collective, proposing coordinated roadshows and sales missions and the bundling of Muslim-friendly elements into distinctive itineraries and market corridors.

> If possible, we want roadshows, like the sales mission's tourism bodies run... so we can create awareness that our hotels have this recognition and encourage others to take it up. (H05)

> Other hotels that do not yet have MFAR ask why they should take it up. Perhaps ITC needs to promote MFAR more aggressively, going to each department to sell the brand and build awareness. (H03)

> Paid training could work. Previously everything was free; now we pay half, with the rest from sponsorship. Half and half are better, because those who come from far still carry real costs. (TA05)

These proposals are, in effect, a stakeholder-generated agenda for strengthening the destination as a whole. Integrated credentialing would address the record-keeping considerations described in in the third theme; shared, standardised training would strengthen the link between certification and practical competence; and collaborative promotion would connect certified firms into a jointly marketed destination network. Two qualifications should be noted. H03's account contains a critical signal: non-adopting hotels question why they should take MFAR up at all, which suggests that the value of recognition is not yet sufficiently communicated to firms outside the scheme, and H03 accordingly called for stronger promotion of MFAR. TA05's insistence on cost-sharing also qualifies the willingness to invest capacity building is supported, but on terms that recognise the costs carried by operators from distant regions. Each proposal maps onto mechanisms that resilience and collaborative-governance scholarship identify as sources of durable, community-embedded tourism development (Ansell & Gash, 2008; Basyar et al., 2025; Harini et al., 2025). The findings indicate that informants can identify what the ecosystem needs; what they lack is a governance arrangement through which to act on it collectively.

Cross-Sector Comparison: Where Hotels and Travel Agencies Diverged

The two-sector design shows that hotels and travel agencies experience the same ecosystem from different positions, and

that their concerns diverge more than they converge (Table 2). Hotels framed sustainability primarily in terms of ownership and demand. Theme 1 emerged only in the hotel session, where the durability of Muslim-friendly provision was explained by who owns the property and whether the market rewards it. Hotels deliver a largely self-contained product within their own premises, and only one hotel informant (H04) reported dependence on external providers, in the form of uncertified local suppliers.

Travel agencies, by contrast, framed sustainability in terms of the reliability of others. Every agency informant raised coordination gaps, and three of the five raised credentialing issues, whereas no hotel informant did. Because agencies assemble journeys from accommodation, guides, eateries, and transport that they do not control, they are exposed to every weak link in the chain, and their reliance on official registries is the means through which that exposure is managed, which makes the accuracy of those registries particularly important to them. Their proposals accordingly targeted the shared infrastructure, namely licence alignment and standardised training, while hotels' proposals targeted demand, namely roadshows, sales missions, and stronger promotion of MFAR to non-adopters.

The sectors converged on two points: both encountered gaps in the certified supply base (H04; TA05), and both looked to ITC to lead training and promotion. The divergence carries an analytical implication. Certification is anchored in the individual establishment, but the systemic risks identified in this study are borne disproportionately by intermediaries, which suggests that the resilience of a Muslim-friendly destination is most visible from, and most fragile at, the points where actors depend on one another.

Synthesis: A Social Fabric Model of Destination Resilience

The four themes describe a destination whose Muslim-friendly character rests on more than the certification of its firms. Table 3 synthesises the findings, linking each theme to its underlying systemic condition, to the evidence on which it rests,

Table 3
Thematic synthesis of ecosystem conditions

Theme	Systemic Condition	Evidence Base (Informants)	Resilience Implication
Commercial contingency vs. pre-existing commitment	Revenue-contingent vs. ownership-rooted commitment	3 hotels; 0 agency	Durability rests on commitments that pre-date certification; revenue-contingent provision is fragile
Ecosystem coordination	Unlinked records; uncertified suppliers; regional accommodation gaps	1 hotel; 5 agencies	Coordination and sourcing costs fall on individual operators

Table 3 (*continued*)

Theme	Systemic Condition	Evidence Base (Informants)	Resilience Implication
Credentialing trust	Currency of certification records; credential and practical competence	0 hotel; 3 agencies	Current records and competence-based assessment sustain agencies' confidence in credentials
Collaborative innovation	Integrated licensing; shared training; joint promotion	2 hotels; 2 agencies	Collaborative governance is needed to maintain shared credential infrastructure

Source: Authors' analysis

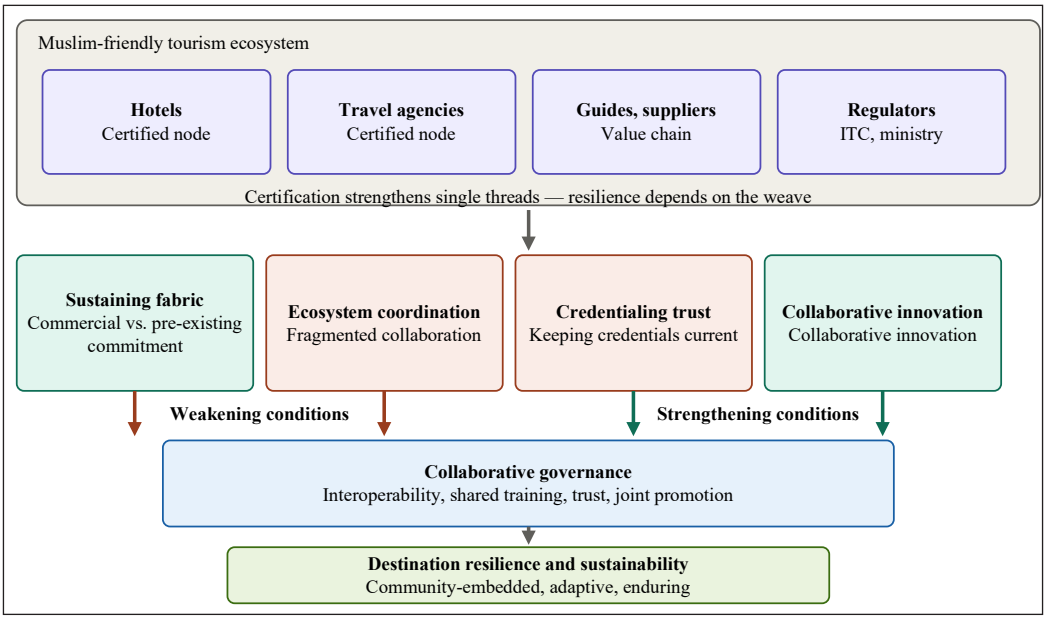

Figure 1. The social fabric framework linking stakeholder conditions to destination resilience
Source: Authors' conceptualisation

and to its implication for the resilience and sustainability of the destination.

The model reframes MFAR from a firm-level accolade into one thread within a destination-wide social fabric. Its metaphorical terms are used only where they correspond to the data: thread strength refers to firm-level commitment, weave integrity to inter-organisational coordination, and knot reliability to the credential interfaces at which actors rely on one another. Its central proposition is that the resilience of a Muslim-friendly destination depends on the coordination and credential infrastructure that binds stakeholders rather than on the number of firms that certification reinforces.

Figure 1 renders the social fabric model as an integrated conceptual framework and

sets out the logic proposed on the basis of the findings. At the top, the Muslim-friendly tourism ecosystem is depicted as a set of interdependent nodes (including hotels, travel agencies, guides and suppliers, and regulators), each of which may hold or contribute to MFAR recognition. The framework's first proposition is captured in the transition beneath this layer: certification reinforces individual threads, but the resilience of the destination is a property of the weave that binds them, not of any node in isolation.

The middle tier positions the four empirical themes as the systemic conditions through which the fabric is either weakened or strengthened. Commitment and collaborative innovation operate as strengthening conditions: commitment that pre-dates certification gives provision durability beyond the revenue calculus, while collaborative innovation reinforces the wider system. Coordination gaps and credentialing maintenance operate as conditions that, if unaddressed, weaken the system: unlinked systems and uncertified suppliers shift costs onto individual operators, and the confidence that credentials provide depends on records being kept current. The divergent arrows make explicit that these conditions do not merely coexist but push the ecosystem in opposite directions.

The framework's pivotal (see Figure 1) claim is located at the convergence point: all four conditions are mediated by collaborative governance. Interoperable regulatory systems, shared and standardised training, restored trust, and joint promotion are the mechanisms through which weakening conditions could be remedied and strengthening conditions consolidated. It is through this governance layer, rather than through the accumulation of firm-level certifications, that a resilient, sustainable, and community-embedded Muslim-friendly destination would be realised. The model, therefore, reframes MFAR not as an endpoint but as one thread whose contribution to destination resilience is contingent on the strength of the surrounding weave, offering a set of propositions that future research with larger and more diverse samples can test.

Three propositions follow from the findings. P1: In credential-dependent faith-based tourism, the durability of Muslim-friendly provision depends more on ownership-level commitment that exists independently of certification than on certification itself. P2: Certification relocates the burden of verification from individual firms to shared institutional records, so that the currency of those records, rather than the number of certified firms, conditions destination resilience. P3: Because the upkeep of shared credential infrastructure is a collective good, it requires collaborative governance between certifying bodies, licensing authorities, and industry; in its absence, the costs of an incomplete ecosystem fall disproportionately on intermediaries. These propositions are derived from eleven informants in two sub-sectors and are offered for examination, not as established relationships.

CONCLUSION

Theoretical Contributions

This study makes three contributions to the literature on faith-based and sustainable tourism, each of which should be read in light of its exploratory scope. First, by shifting the analytical unit from the certified firm to the destination ecosystem, it shows that the conditions that most affect Muslim-friendly provision, namely the linkage of records, the certified supplier base, and the currency of credentials, lie between firms rather than within them, and are borne disproportionately by intermediaries. Second, it specifies what the integration of stakeholder theory, social capital, and collaborative governance adds beyond relabelling. Stakeholder theory identifies the interdependence among hotels, agencies, guides, suppliers, and regulators; institutional trust (Zucker, 1986) explains how actors manage that interdependence, by relying on credentials instead of verifying one another; and collaborative governance (Ansell & Gash, 2008) identifies who must maintain the credential infrastructure on which that reliance depends. The resulting claim, that certification relocates the burden of verification to shared institutional records and that destination resilience therefore depends on the currency of those records, is not available from any of the three perspectives alone. Third, the findings qualify the assumption that certification produces internalised commitment: where commitment was durable, it pre-dated MFAR, and where it did not, provision remained revenue contingent. The social fabric model organises these claims as propositions for future testing (Almunawar et al., 2025; Basyar et al., 2025; Elhoushy et al., 2026).

IMPLICATION OF THE STUDY

For policymakers and certifying bodies, the findings should be read alongside what has already been achieved: a national Muslim-friendly standard, a growing base of recognised firms and, preceding MFAR, a Muslim-friendly guide certification that informants credited as the source of their understanding of Muslim travellers' needs (TA02). The gaps identified here lie largely at the interfaces between agencies and in the shared infrastructure around certified firms, which no single certifying body can close on its own, and they form a natural agenda for the framework's next phase. Three priorities follow. The first is credentialing interoperability, which would strengthen the Islamic Tourism Centre's ability to assure Muslim-friendly quality across the value chain and depends on the cooperation of the ministry's licensing function. It could be pursued through a sequence of practical steps: (1) a formal data-sharing agreement between the Islamic Tourism Centre and the licensing function of the Ministry of Tourism, Arts and Culture; (2) a common identifier linking each guide's city guide licence to the Muslim-friendly guide credential, and each establishment's MFAR status to its ministry licence; (3) automatic status synchronisation, so that a Muslim-friendly credential is flagged or suspended when the underlying licence lapses; (4) a

single public verification portal displaying the current status and expiry dates of both credentials; and (5) scheduled registry audits with published update intervals. The second is strengthening credential assessment so that holding a credential reliably indicates substantive Muslim-friendly competence. The third is expanding the certified supplier base in regions where certified firms currently cannot source Muslim-friendly inputs. For industry associations and operators, the stakeholder-generated agenda of integrated licensing, standardised continuous training on a cost-sharing basis, and collaborative promotion, including promotion aimed at non-adopting firms that do not yet see the value of recognition, offers a practical route to strengthening the collective. Because these measures build the trust and cooperation on which community-embedded tourism depends, they are properly understood not merely as administrative reforms but as investments in the social fabric of the destination and, by extension, in the resilience and sustainability of the communities that host it.

LIMITATION AND FUTURE RESEARCH

This study has limitations that also highlight potential directions for future research. The analysis draws on two focus group discussions with eleven informants from the accommodation and intermediary sectors. This supports exploratory insight into how these informants perceive the ecosystem, but it does not establish how widely these views are held, and several themes rest on a small number of voices: the revenue-contingent view in the first theme was expressed by one informant, and the credentialing theme by three agency informants. References to the ecosystem in this study should therefore be read as the ecosystem as experienced by these informants. The analysed material consists of rapporteur notes rather than verbatim transcripts, and the excerpts reported are the authors' translations; the findings therefore describe what participants reported rather than independently observed practice. The study also omits suppliers, regulators, and tourists, whose inclusion would test whether the problems identified here are recognised across the value chain. Future research could operationalise the model's constructs, thread strength, weave integrity, and knot reliability, into measurable indicators of destination resilience and test Propositions P1-P3 quantitatively across multiple destinations. Comparative studies of destinations at different stages of ecosystem maturity and longitudinal work tracing how collaborative governance interventions affect resilience over time would further advance understanding of how the social fabric of faith-based tourism can be sustainably woven.

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